

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

**FORM S-4
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

Lantheus Holdings, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2835
(Primary Standard Industrial
Classification Code Number)

35-2318913
(I.R.S. Employer
Identification No.)

331 Treble Cove Road, North Billerica, Massachusetts 01862
(978) 671-8001

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Michael P. Duffy
Senior Vice President and General Counsel
331 Treble Cove Road, Building 600-2
North Billerica, Massachusetts 01862
(978) 671-8408

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies of all communications, including communications sent to agent for service, should be sent to:

Morton A. Pierce, Esq.
Bryan J. Luchs, Esq.
Michelle B. Rutta, Esq.
White & Case LLP
1221 Avenue of the Americas
New York, New York 10020
(212) 819-8200

Patrick Fabbio
Corporate Secretary
Progenics Pharmaceuticals, Inc.
One World Trade Center, 47th Floor
New York, New York 10007
(646) 975-2500

Tobias L. Knapp, Esq.
O'Melveny & Myers LLP
7 Times Square
New York, New York 10036
(212) 326-2000

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement and upon completion of the merger described in the enclosed joint proxy statement/prospectus.

If the securities being registered on this form are being offered in connection with the formation of a holding company and there is compliance with General Instruction G, check the following box.

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the "Securities Act"), check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

Large accelerated filer
Non-accelerated filer

Accelerated filer
Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

If applicable, place an X in the box to designate the appropriate rule provision relied upon in conducting this transaction:

Exchange Act Rule 13e-4(i) (Cross-Border Issuer Tender Offer)

Exchange Act Rule 14d-1(d) (Cross-Border Third-Party Tender Offer)

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price Per Unit	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, par value \$0.01 per share	23,421,376(1)	Not Applicable	\$124,367,505.90(2)	\$16,142.90(3)
(1) Represents the maximum number of shares of common stock, par value \$0.01 per share, of Lantheus Holdings, Inc. ("Lantheus Holdings") issuable to holders of common stock, par value \$0.0013 per share, of Progenics Pharmaceuticals, Inc. ("Progenics") and to holders of certain Progenics options in connection with the proposed merger described in this registration statement. The maximum number of shares of Lantheus Holdings common stock issuable pursuant to the merger (the "Estimated Number") is equal to the product of (a) the sum of (i) 86,421,634, the number of shares of Progenics common stock outstanding as of November 7, 2019 and (ii) 7,188,981, the number of shares of Progenics common stock issuable upon the exercise of Progenics options outstanding as of November 7, 2019, and (b) a multiple of 0.2502, the exchange ratio in the merger.				
(2) Estimated solely for purposes of calculating the registration fee required by Section 6(b) of the Securities Act and calculated pursuant to Rules 457(c) and 457(f) under the Securities Act. The proposed maximum aggregate offering price for Lantheus Holdings common stock is based on the market value of Progenics common stock to be cancelled in the merger as follows: product of (i) \$5.31 (the average of the high and low prices of the Progenics common stock as reported on the Nasdaq Global Select Market on November 7, 2019) and (ii) the Estimated Number.				
(3) Calculated pursuant to Section 6(b) of the Securities Act at a rate equal to \$129.80 per \$1,000,000 of the proposed maximum aggregate offering price.				

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to Section 8(a), may determine.

Information contained herein is subject to completion or amendment. A registration statement relating to these securities has been filed with the U.S. Securities and Exchange Commission. These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective. This joint proxy statement/prospectus shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any jurisdiction in which such offer, solicitation or sale is not permissible.

PRELIMINARY—SUBJECT TO COMPLETION—DATED NOVEMBER 12, 2019



MERGER PROPOSAL—YOUR VOTE IS VERY IMPORTANT

[●], 2019

Dear Stockholders:

On behalf of the boards of directors of Lantheus Holdings, Inc. ("Lantheus Holdings") and Progenics Pharmaceuticals, Inc. ("Progenics"), we are pleased to enclose the joint proxy statement/prospectus relating to the merger of Progenics with a wholly-owned subsidiary of Lantheus Holdings (the "merger") pursuant to the terms of a merger agreement entered into by Lantheus Holdings and Progenics on October 1, 2019 (as it may be amended from time to time, the "merger agreement").

If the merger is completed, Progenics stockholders immediately prior to the completion of the merger will be entitled to receive 0.2502 of a share of Lantheus Holdings common stock for each share of Progenics common stock held by them, as described in more detail in the accompanying joint proxy statement/prospectus under the heading "The Merger Agreement—Merger Consideration." The exchange ratio is fixed and will not be adjusted to reflect stock price changes prior to the completion of the merger. Based on the closing price of shares of Lantheus Holdings common stock on November 8, 2019, the most recent trading day prior to the date of the accompanying joint proxy statement/prospectus for which this information was available, the merger consideration represented approximately \$5.37 in value per share of Progenics common stock. The value of the consideration to be received by Progenics stockholders will fluctuate with changes in the price of the shares of Lantheus Holdings common stock. We urge you to obtain current market quotations for shares of Lantheus Holdings common stock and shares of Progenics common stock. Shares of Lantheus Holdings common stock are traded on the Nasdaq Global Market under the symbol "LNTH" and shares of Progenics common stock are traded on the Nasdaq Global Select Market under the symbol "PGNX."

Each of Lantheus Holdings and Progenics will hold a special meeting of its stockholders in connection with the merger agreement.

The Lantheus Holdings special meeting of stockholders will be held at [●], on [●], at [●], Eastern Time. At the Lantheus Holdings special meeting, Lantheus Holdings stockholders will be asked to vote on (i) a proposal to approve the issuance of shares of Lantheus Holdings common stock in the merger and (ii) a proposal to approve the adjournment from time to time of the Lantheus Holdings special meeting if necessary to solicit additional proxies if there are not sufficient votes at the time of the Lantheus Holdings special meeting, or any adjournment or postponement thereof, to approve the issuance of shares of Lantheus Holdings common stock in the merger. **Lantheus Holdings' board of directors determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger and the issuance of shares of Lantheus Holdings common stock in the merger, are advisable, fair to and in the best interests of Lantheus Holdings and its stockholders and unanimously recommends that Lantheus Holdings stockholders vote "FOR" each proposal.**

The Progenics special meeting of stockholders will be held at [●], on [●], at [●], Eastern Time. At the Progenics special meeting, Progenics stockholders will be asked to vote on (i) a proposal to adopt the merger agreement, (ii) a proposal to approve the adjournment from time to time of the Progenics special meeting if necessary to solicit additional proxies if there are not sufficient votes to adopt the merger agreement at the time of the Progenics special meeting, or any adjournment or postponement thereof, and (iii) a proposal to approve, on an advisory (non-binding) basis, the compensation that will or may be paid or provided by Progenics to its named executive officers in connection with the merger. **Progenics Board unanimously determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger, are advisable, fair to and in the best interests of Progenics and its stockholders and unanimously recommends that Progenics stockholders vote "FOR" each proposal.**

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Lantheus Holdings expects to issue up to approximately 21,722,636 shares of its common stock to Progenics stockholders in the merger. In addition, shares of Lantheus Holdings common stock may be issued from time to time following the effective time of the merger to holders of options to purchase Progenics common stock on the terms set forth in the merger agreement. See “The Merger Agreement—Treatment of Progenics Stock Options” beginning on page 153 of the accompanying joint proxy statement/prospectus for a more detailed explanation. Based on the number of fully diluted shares of Lantheus Holdings common stock and Progenics common stock outstanding as of November 8, 2019, Lantheus Holdings and Progenics estimate that, immediately after the completion of the merger, Lantheus Holdings stockholders will own approximately 65% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding) and former Progenics stockholders will own approximately 35% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding).

The accompanying joint proxy statement/prospectus provides important information regarding the Lantheus Holdings and Progenics special meetings and a detailed description of the merger agreement, the merger, the issuance of shares of Lantheus Holdings common stock in the merger, the adjournment proposals and the proposal to approve, on an advisory (non-binding) basis, the compensation that will or may be paid or provided by Progenics to its named executive officers in connection with the merger. We urge you to read carefully and in its entirety the accompanying joint proxy statement/prospectus (including the annexes and any documents incorporated by reference into the accompanying joint proxy statement/prospectus). **Please pay particular attention to the section entitled “[Risk Factors](#)” beginning on page 34 of the accompanying joint proxy statement/prospectus.** You can also obtain information about Lantheus Holdings and Progenics from documents that Lantheus Holdings and Progenics previously have filed with the U.S. Securities and Exchange Commission.

For a discussion of the material U.S. federal income tax consequences of the merger, see “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Material U.S. Federal Income Tax Consequences” beginning on page 147 of the accompanying joint proxy statement/prospectus.

We hope to see you at the applicable special meeting and look forward to the successful completion of the merger.

Your vote is very important, regardless of the number of shares you own. We cannot complete the merger and the merger consideration will not be paid unless (i) Lantheus Holdings stockholders approve the issuance of shares of Lantheus Holdings common stock in the merger and (ii) Progenics stockholders adopt the merger agreement. Whether or not you plan to attend your company’s special meeting of stockholders, please submit your proxy as soon as possible to make sure your shares are represented at that meeting.

Sincerely,

Sincerely,

Brian Markison
Chairman of the Board of Directors of Lantheus Holdings

Karen J. Ferrante
Chair of the Board of Directors of Progenics

Neither the U.S. Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities to be issued under the accompanying joint proxy statement/prospectus or determined that the accompanying joint proxy statement/prospectus is accurate or complete. Any representation to the contrary is a criminal offense.

The accompanying joint proxy statement/prospectus is dated [●], 2019 and is first being mailed to Lantheus Holdings stockholders on or about [●], 2019 and Progenics stockholders on or about [●], 2019.



Lantheus Holdings, Inc.
331 Treble Cove Road
North Billerica, Massachusetts 01862
(978) 671-8001

**NOTICE OF SPECIAL MEETING OF STOCKHOLDERS
OF LANTHEUS HOLDINGS, INC.
TO BE HELD ON [●]
[●], EASTERN TIME**

To the Stockholders of Lantheus Holdings, Inc.:

NOTICE IS HEREBY GIVEN that a special meeting of stockholders of Lantheus Holdings, Inc., a Delaware corporation, which is referred to in this notice as Lantheus Holdings, will be held at [●], on [●], at [●], Eastern Time, for the following purposes:

1. to consider and vote on a proposal to approve the issuance of shares of Lantheus Holdings common stock, par value \$0.01 per share, which is referred to in this notice as Lantheus Holdings common stock, in the merger contemplated by the Agreement and Plan of Merger, dated as of October 1, 2019, as it may be amended from time to time, which is referred to in this notice as the merger agreement, among Lantheus Holdings, Plato Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of Lantheus Holdings, and Progenics Pharmaceuticals, Inc., a Delaware corporation, which is referred to in this notice as Progenics, pursuant to which Plato Merger Sub, Inc. will be merged with and into Progenics, which is referred to in this notice as the merger, with Progenics surviving the merger as a wholly-owned subsidiary of Lantheus Holdings (a copy of the merger agreement is attached as Annex A to the accompanying joint proxy statement/prospectus), which is referred to in this notice as the stock issuance proposal; and
2. to consider and vote on a proposal to approve the adjournment from time to time of the special meeting of stockholders of Lantheus Holdings, which is referred to in this notice as the Lantheus Holdings special meeting, if necessary to solicit additional proxies if there are not sufficient votes at the time of the Lantheus Holdings special meeting, or any adjournment or postponement thereof, to approve the stock issuance proposal, which is referred to in this notice as the Lantheus Holdings adjournment proposal.

The Lantheus Holdings board of directors has fixed the close of business on [●] as the record date for the determination of the stockholders entitled to vote at the Lantheus Holdings special meeting or any adjournment or postponement thereof. Only stockholders of record at the record date are entitled to notice of, and to vote at, the Lantheus Holdings special meeting or any adjournment or postponement thereof.

Your vote is very important, regardless of the number of shares of Lantheus Holdings common stock that you own. Approval of the stock issuance proposal requires the affirmative vote of at least a majority of the votes cast by holders of outstanding shares of Lantheus Holdings common stock at a duly called and held meeting of Lantheus Holdings stockholders at which a quorum is present. Approval of the Lantheus Holdings adjournment proposal requires the affirmative vote of holders of a majority of the shares of Lantheus Holdings common stock present in person or represented by proxy at the Lantheus Holdings special meeting and entitled to vote thereat (assuming a quorum is present). In the absence of a quorum, the Lantheus Holdings special meeting may be adjourned by the Chairperson of the meeting.

Lantheus Holdings' board of directors determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger and the issuance of shares of Lantheus

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Holdings common stock in the merger, are advisable, fair to and in the best interests of Lantheus Holdings and its stockholders and unanimously recommends that Lantheus Holdings stockholders vote (i) “FOR” the approval of the issuance of shares of Lantheus Holdings common stock in the merger and (ii) “FOR” the approval of the adjournment from time to time of the Lantheus Holdings special meeting if necessary to solicit additional proxies if there are not sufficient votes at the time of the Lantheus Holdings special meeting, or any adjournment or postponement thereof, to approve the issuance of shares of Lantheus Holdings common stock in the merger.

By order of the Board of Directors,

BRIAN MARKISON
Chairman of the Board of Directors

North Billerica, Massachusetts
[●], 2019

YOUR VOTE IS IMPORTANT!

WHETHER OR NOT YOU EXPECT TO ATTEND THE LANTHEUS HOLDINGS SPECIAL MEETING IN PERSON, WE URGE YOU TO SUBMIT YOUR PROXY AS PROMPTLY AS POSSIBLE (1) VIA THE INTERNET, (2) BY TELEPHONE OR (3) BY COMPLETING, SIGNING AND DATING THE ENCLOSED LANTHEUS HOLDINGS PROXY CARD AND RETURNING IT IN THE POSTAGE-PAID ENVELOPE PROVIDED.

IMPORTANT INFORMATION IF YOU PLAN TO ATTEND THE LANTHEUS HOLDINGS SPECIAL MEETING IN PERSON:

A form of photo identification will be required to enter the meeting.

You will need to provide evidence that you are a stockholder as of the close of business on the record date. This can be a copy of your proxy card or a brokerage statement showing your shares as of the close of business on the record date.

If you hold your shares of Lantheus Holdings common stock in "street name" through a broker, bank or other nominee, you will need to contact the broker, bank or other nominee that holds your shares in order to obtain a legal proxy from that broker, bank or other nominee.

You may revoke your proxy or change your vote for shares of Lantheus Holdings common stock you hold directly in your name by (i) signing another proxy card with a later date and delivering it to 331 Treble Cove Road, North Billerica, MA 01862, Attention: Investor Relations, before the date of the Lantheus Holdings special meeting (we recommend you mail your proxy by **■** to ensure timely receipt of your proxy), (ii) submitting revised votes over the Internet or by telephone before 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Lantheus Holdings special meeting, or (iii) attending the Lantheus Holdings special meeting in person and voting your shares of Lantheus Holdings common stock at the Lantheus Holdings special meeting. If your shares of Lantheus Holdings common stock are held in the name of a bank, broker or other nominee, please follow the instructions on the voting instruction form furnished to you by such bank, broker or other nominee.

The accompanying joint proxy statement/prospectus contains a detailed description of the merger, the merger agreement and the other matters to be considered at the meeting. We urge you to read carefully the accompanying joint proxy statement/prospectus, including all documents incorporated by reference into the accompanying joint proxy statement/prospectus, and its annexes, in their entirety. If you have any questions concerning the merger agreement, the merger, the issuance of shares of Lantheus Holdings common stock in the merger, the Lantheus Holdings adjournment proposal, the Lantheus Holdings special meeting or the accompanying joint proxy statement/prospectus (or any other information contained therein), would like additional copies of the accompanying joint proxy statement/prospectus or need help voting your shares of Lantheus Holdings common stock, please contact:



Innisfree M&A Incorporated
501 Madison Avenue, 20th Floor
New York, New York 10022
Telephone (Toll-Free): (877) 750-9497
International Callers: (412) 232-3651
Banks and brokers may call collect: (212) 750-5833



Progenics Pharmaceuticals, Inc.
One World Trade Center, 47th Floor, Suite J
New York, New York 10007
(646) 975-2500

**NOTICE OF SPECIAL MEETING OF STOCKHOLDERS OF
PROGENICS PHARMACEUTICALS, INC.
TO BE HELD ON [●]
AT [●], EASTERN TIME**

To the Stockholders of Progenics Pharmaceuticals, Inc.:

NOTICE IS HEREBY GIVEN that a special meeting of stockholders of Progenics Pharmaceuticals, Inc., a Delaware corporation, which is referred to in this notice as Progenics, will be held at [●], on [●], at [●], Eastern Time, for the following purposes:

1. to consider and vote on a proposal to adopt the Agreement and Plan of Merger, dated as of October 1, 2019, as it may be amended from time to time, which is referred to in this notice as the merger agreement, among Lantheus Holdings, Inc., a Delaware corporation, which is referred to in this notice as Lantheus Holdings, Plato Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of Lantheus Holdings, and Progenics, pursuant to which Plato Merger Sub, Inc. will be merged with and into Progenics, which is referred to in this notice as the merger, with Progenics surviving the merger as a wholly-owned subsidiary of Lantheus Holdings (a copy of the merger agreement is attached as Annex A to the accompanying joint proxy statement/prospectus), which is referred to in this notice as the merger agreement proposal;
2. to consider and vote on a proposal to approve the adjournment from time to time of the special meeting of stockholders of Progenics, which is referred to in this notice as the Progenics special meeting, if necessary to solicit additional proxies if there are not sufficient votes to adopt the merger agreement at the time of the Progenics special meeting or any adjournment or postponement thereof, which is referred to in this notice as the Progenics adjournment proposal; and
3. to consider and vote on a proposal to approve, on an advisory (non-binding) basis, the compensation that will or may be paid or provided by Progenics to its named executive officers in connection with the merger which is referred to in this notice as the Progenics compensation advisory proposal.

The holders of record of shares of Progenics common stock, par value \$0.0013 per share, which are referred to in this notice as shares of Progenics common stock, at the close of business on [●] are entitled to notice of and to vote at the Progenics special meeting or any adjournment or postponement thereof. Progenics anticipates commencing its solicitation of proxies on or about [●]. Progenics will continue to solicit proxies until the date of the Progenics special meeting.

Only stockholders or their proxy holders may attend the Progenics special meeting. If you are attending the Progenics special meeting in person, you will be required to register as a stockholder or proxy holder and to show valid, government-issued identification before entering Progenics special meeting.

Adoption of the merger agreement requires the affirmative vote, in person or by proxy, of the holders of a majority of the shares of Progenics common stock outstanding and entitled to vote thereon. Approval of the adjournment proposal requires the affirmative vote of the holders of a majority of the shares of Progenics common stock present in person or represented by proxy at the Progenics special meeting and entitled to vote thereat (whether or not a quorum, as defined under Progenics' By-laws, is present). Approval of the proposal to approve, on an advisory (non-binding) basis, the compensation that will or may be paid or provided by Progenics to its named executive officers in connection with the merger requires the affirmative vote of a majority of the votes cast in person or by proxy at the Progenics special meeting by holders of shares of Progenics common stock (assuming a quorum, as defined under Progenics' By-laws, is present).

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Progenics' board of directors unanimously determined that the merger agreement and the transactions contemplated by the merger agreement (including the merger) are fair to and in the best interests of Progenics and its stockholders and unanimously recommends that Progenics stockholders vote (i) "FOR" the proposal to adopt the merger agreement, (ii) "FOR" the proposal to approve the adjournment from time to time of the Progenics special meeting if necessary to solicit additional proxies if there are not sufficient votes to adopt the merger agreement at the time of the Progenics special meeting or any adjournment or postponement thereof and (iii) "FOR" the proposal to approve, on an advisory (non-binding) basis, the compensation that will or may be paid or provided by Progenics to its named executive officers in connection with the merger.

By order of the Board of Directors,

PATRICK FABBIO
Secretary

New York, New York
[●], 2019

YOUR VOTE IS IMPORTANT!

WHETHER OR NOT YOU EXPECT TO ATTEND THE PROGENICS SPECIAL MEETING IN PERSON, WE URGE YOU TO SUBMIT YOUR PROXY AS PROMPTLY AS POSSIBLE (1) VIA THE INTERNET, (2) BY TELEPHONE OR (3) BY COMPLETING, SIGNING AND DATING THE ENCLOSED PROGENICS PROXY CARD AND RETURNING IT IN THE POSTAGE-PAID ENVELOPE PROVIDED. IF YOU ATTEND THE PROGENICS SPECIAL MEETING IN PERSON AND WISH TO VOTE YOUR SHARES AT THE PROGENICS SPECIAL MEETING, YOU MAY DO SO AT ANY TIME PRIOR TO THE CLOSING OF THE POLLS AT THE PROGENICS SPECIAL MEETING. You may revoke your proxy or change your vote for shares of Progenics common stock you hold directly in your name by (i) signing another proxy card with a later date and delivering it to MacKenzie Partners, Inc., 1407 Broadway, 27th Floor, New York, New York 10018, before the date of the Progenics special meeting (we recommend you mail your proxy by [●] to ensure timely receipt of your proxy), (ii) submitting revised votes over the Internet or by telephone before 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Progenics special meeting, or (iii) attending the Progenics special meeting in person and voting your shares of Progenics common stock at the Progenics special meeting. If your shares of Progenics common stock are held in the name of a bank, broker or other nominee, please follow the instructions on the voting instruction form furnished to you by bank, broker or other nominee.

Progenics cannot complete the merger and the merger consideration will not be paid unless its stockholders adopt the merger agreement and the other closing conditions specified in the merger agreement are met. Because adoption of the merger agreement requires the affirmative vote of the holders of at least a majority of the shares of Progenics common stock outstanding and entitled to vote thereon, a Progenics stockholder's abstention from voting, the failure of a Progenics stockholder who holds his or her shares in "street name" through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee or any other failure of a Progenics stockholder to vote will have the same effect as a vote "AGAINST" the proposal to adopt the merger agreement.

We urge you to read carefully the accompanying joint proxy statement/prospectus, including all documents incorporated by reference into the accompanying joint proxy statement/prospectus, and its annexes, in their entirety. If you have any questions concerning the merger agreement, the merger, the vote on the merger agreement, the adjournment proposal, the advisory (non-binding) proposal to approve the compensation that will or may be paid or provided by Progenics to its named executive officers in connection with the merger, the Progenics special meeting or the accompanying joint proxy statement/prospectus (or any other information contained therein), would like additional copies of the accompanying joint proxy statement/prospectus or need help voting your shares of Progenics common stock, please contact:

MacKenzie Partners, Inc.
1407 Broadway, 27th Floor
New York, New York 10018
(212) 929-5500 or (800) 322-2885
Email: PGNX@mackenziepartners.com

REFERENCES TO ADDITIONAL INFORMATION

The accompanying document is the proxy statement of Lantheus Holdings for its special meeting of stockholders, the proxy statement of Progenics for its special meeting of stockholders and the prospectus of Lantheus Holdings for the shares of its common stock to be issued in the merger. The accompanying joint proxy statement/prospectus incorporates by reference important business and financial information about Lantheus Holdings and Progenics from documents that are not included in or delivered with the accompanying joint proxy statement/prospectus. You can obtain the documents that are incorporated by reference into the accompanying joint proxy statement/prospectus (other than certain exhibits or schedules to those documents), without charge, by requesting them in writing or by telephone from Lantheus Holdings or Progenics, respectively, at the following addresses and telephone numbers, or through the U.S. Securities and Exchange Commission website at www.sec.gov:

Lantheus Holdings, Inc.
331 Treble Cove Road
North Billerica, Massachusetts 01862
Attention: Investor Relations
Telephone: (978) 671-8842

Progenics Pharmaceuticals, Inc.
One World Trade Center, 47th Floor
New York, New York 10007
Attention: Corporate Secretary
Telephone: (646) 975-2500

In addition, if you have questions about the merger or the accompanying joint proxy statement/prospectus, would like additional copies of the accompanying joint proxy statement/prospectus, or need to obtain proxy cards or other information related to the proxy solicitation, please contact Innisfree M&A Incorporated, the proxy solicitor for Lantheus Holdings, toll-free at (877) 750-9497 or (412) 232-3651 for international callers, if you are a Lantheus Holdings stockholder, or MacKenzie Partners, Inc., the proxy solicitor for Progenics, toll-free at (800) 322-2885, collect at (212) 929-5500 or proxy@mackenziepartners.com, if you are a Progenics stockholder. You will not be charged for any of these documents that you request.

To obtain timely delivery of the documents, you must request them no later than the dates specified in this joint proxy statement/prospectus. If you are a Lantheus Holdings stockholder and would like to request documents from Lantheus Holdings, please contact Innisfree M&A Incorporated by [●] in order to receive them before the Lantheus Holdings special meeting. If you are a Progenics stockholder and would like to request documents from Progenics, please contact MacKenzie Partners, Inc. by [●] in order to receive them before the Progenics special meeting.

See “Where You Can Find More Information” beginning on page 222 of the accompanying joint proxy statement/prospectus for further information.

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QUESTIONS AND ANSWERS ABOUT THE MERGER AND THE SPECIAL MEETINGS

The following are some questions that you, as a stockholder of Lantheus Holdings, Inc., which is referred to in this joint proxy statement/prospectus as Lantheus Holdings, or a stockholder of Progenics Pharmaceuticals, Inc., which is referred to in this joint proxy statement/prospectus as Progenics, may have regarding the merger agreement, the merger, the stock issuance, the Lantheus Holdings adjournment proposal, the Progenics adjournment proposal, the Progenics compensation advisory proposal and the special meetings as well as brief answers to those questions. You are urged to read carefully this joint proxy statement/prospectus, including all documents incorporated by reference into this joint proxy statement/prospectus, and its annexes, in their entirety because this section may not provide all of the information that is important to you with respect to the merger agreement, the merger, the stock issuance, the Lantheus Holdings adjournment proposal, the Progenics adjournment proposal, the Progenics compensation advisory proposal and the special meetings. Additional important information is contained in the annexes to, and the documents incorporated by reference into, this joint proxy statement/prospectus. See “Where You Can Find More Information” beginning on page 222 of this joint proxy statement/prospectus.

About the Merger Agreement and the Merger

Q: Why am I receiving this document and why am I being asked to vote on the merger agreement?

A: Lantheus Holdings and Progenics have agreed to a merger, which is referred to in this joint proxy statement/prospectus as the merger, pursuant to which Progenics will become a wholly-owned subsidiary of Lantheus Holdings and will no longer be a publicly traded corporation. Following the merger, Progenics common stock will be delisted from the Nasdaq Global Select Market and deregistered under the Securities Exchange Act of 1934, as amended, which is referred to in this joint proxy statement/prospectus as the Exchange Act, and Progenics will no longer be required to file periodic reports with the U.S. Securities and Exchange Commission, which is referred to in this joint proxy statement/prospectus as the SEC. In order to complete the merger, holders of Lantheus Holdings common stock, who are referred to in this joint proxy statement/prospectus as Lantheus Holdings stockholders, must vote to approve the issuance of shares of Lantheus Holdings common stock to Progenics stockholders in the merger, which issuance is referred to in this joint proxy statement/prospectus as the stock issuance, and Progenics stockholders must vote to adopt the Agreement and Plan of Merger, dated as of October 1, 2019, among Lantheus Holdings, Progenics and Plato Merger Sub, Inc., a wholly-owned subsidiary of Lantheus Holdings, which is referred to in this joint proxy statement/prospectus as Merger Sub. The Agreement and Plan of Merger, as it may be amended from time to time, is referred to in this joint proxy statement/prospectus as the merger agreement.

Lantheus Holdings is holding a special meeting of stockholders, which is referred to in this joint proxy statement/prospectus as the Lantheus Holdings special meeting, in order to obtain the stockholder approval necessary to approve the stock issuance, which is referred to in this joint proxy statement/prospectus as the stock issuance proposal. **Approval of the stock issuance proposal requires the affirmative vote of at least a majority of the votes cast by holders of outstanding shares of Lantheus Holdings common stock, at a duly called and held meeting of Lantheus Holdings stockholders at which a quorum is present.** A majority of the votes cast means that the number of votes cast “FOR” the stock issuance proposal must exceed the number of votes cast “AGAINST.” Lantheus Holdings stockholders will also be asked to approve the adjournment from time to time of the Lantheus Holdings special meeting if necessary to solicit additional proxies if there are not sufficient votes at the time of the Lantheus Holdings special meeting, or any adjournment or postponement thereof, to approve the stock issuance, which is referred to in this joint proxy statement/prospectus as the Lantheus Holdings adjournment proposal. **Approval of the Lantheus Holdings adjournment proposal requires the affirmative vote of the holders of a majority of the shares present in person or represented by proxy at the Lantheus Holdings special meeting and entitled to vote thereat (assuming a quorum is present).** In the absence of a quorum, the Lantheus Holdings special meeting may be adjourned by the Chairperson of the meeting. For purposes of this proposal, “shares of Lantheus Holdings common stock present or represented by proxy” consist of shares

voted “FOR” or “AGAINST” as well as elections to abstain from voting on the proposal. **It is important that Lantheus Holdings stockholders vote their shares of Lantheus Holdings common stock on each of these matters, regardless of the number of shares owned.**

Progenics is holding a special meeting of stockholders, which is referred to in this joint proxy statement/prospectus as the Progenics special meeting, in order to obtain the stockholder approval necessary to adopt the merger agreement. **Adoption of the merger agreement requires the affirmative vote of the holders of at least a majority of the outstanding shares of Progenics common stock entitled to vote thereon.** A Progenics stockholder’s abstention from voting or failure to vote will have the same effect as a vote “AGAINST” the proposal. Progenics stockholders will also be asked to approve the adjournment from time to time of the Progenics special meeting if necessary to solicit additional proxies if there are not sufficient votes to adopt the merger agreement at the time of the Progenics special meeting, or any adjournment or postponement thereof, which is referred to in this joint proxy statement/prospectus as the Progenics adjournment proposal, and to approve, on an advisory (non-binding) basis, the compensation that will or may be paid or provided by Progenics to its named executive officers, whom are referred to in this joint proxy statement/prospectus as the named executive officers, in connection with the merger, which proposal is referred to in this joint proxy statement/prospectus as the Progenics compensation advisory proposal. **Approval of the Progenics adjournment proposal requires the affirmative vote of the holders of a majority of the shares of Progenics common stock present or represented by proxy at the Progenics special meeting and entitled to vote thereat (whether or not a quorum is present).** For purposes of this proposal, “shares of Progenics common stock present or represented by proxy” consist of shares voted “FOR” or “AGAINST” as well as elections to abstain from voting on the proposal. **Approval of the Progenics compensation advisory proposal requires the affirmative vote of the holders of a majority of the votes cast in person or by proxy at the Progenics special meeting.** For purposes of this proposal, a majority of the votes cast means that the number of votes cast “FOR” the proposal must exceed the number of votes cast “AGAINST.” **It is important that Progenics stockholders vote their shares of Progenics common stock on each of these matters, regardless of the number of shares owned.**

This document is being delivered to you as both a joint proxy statement of Lantheus Holdings and Progenics and a prospectus of Lantheus Holdings in connection with the merger and the stock issuance. This document is the proxy statement by which the Lantheus Holdings board of directors, which is referred to in this joint proxy statement/prospectus as the Lantheus Holdings Board, is soliciting proxies from Lantheus Holdings stockholders to vote at the Lantheus Holdings special meeting, or at any adjournment or postponement thereof, on the approval of the stock issuance proposal and the approval of the Lantheus Holdings adjournment proposal. In addition, this document is the prospectus of Lantheus Holdings pursuant to which Lantheus Holdings will issue shares of Lantheus Holdings common stock to Progenics stockholders as the merger consideration, as described under “The Merger Agreement—Merger Consideration” beginning on page 151 of this joint proxy statement/prospectus. This document is also the proxy statement by which the Progenics board of directors, which is referred to in this joint proxy statement/prospectus as the Progenics Board, is soliciting proxies from Progenics stockholders to vote at the Progenics special meeting, or at any adjournment or postponement thereof, on the merger agreement proposal, the Progenics adjournment proposal and the Progenics compensation advisory proposal.

Q: *Is my vote important?*

A: Yes, your vote is very important. If you do not submit a proxy or vote in person at the meeting, it will be more difficult for us to obtain the necessary quorum to hold the meeting. In addition, for Progenics stockholders, an abstention from voting or a failure to vote will have the same effect as a vote “AGAINST” the merger agreement proposal. If you hold your shares of Progenics common stock in “street name” through a broker, bank or other nominee and you do not give voting instructions to that broker, bank or other nominee, that broker, bank or other nominee will not be able to vote your shares on the merger agreement proposal, and your failure to give those instructions will have the same effect as a vote “AGAINST” the merger agreement proposal. A Lantheus Holdings stockholder’s abstention from voting on

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the stock issuance proposal or the failure of a Lantheus Holdings stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee will have no effect on the approval of the stock issuance proposal. The Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the merger agreement proposal, and the Lantheus Holdings Board unanimously recommends that Lantheus Holdings stockholders vote “FOR” the stock issuance proposal.

Q: *What will happen in the merger?*

A: In the merger, Merger Sub will be merged with and into Progenics. Progenics will be the surviving corporation in the merger, which is referred to in this joint proxy statement/prospectus as the surviving corporation or Progenics, and the surviving corporation will be a wholly-owned subsidiary of Lantheus Holdings following completion of the merger. Progenics will no longer be a publicly traded corporation, its shares will be delisted from the Nasdaq Global Select Market and deregistered under the Exchange Act, and it will no longer be required to file periodic reports with the SEC.

Q: *What will Progenics stockholders receive in the merger?*

A: If the merger is completed, each share of Progenics common stock, (other than shares of Progenics common stock owned by Lantheus Holdings, Progenics or any of their respective wholly-owned subsidiaries), will automatically be cancelled and converted into the right to receive 0.2502 (which is referred to in this joint proxy statement/prospectus as the exchange ratio) of a share of Lantheus Holdings common stock, which is referred to in this joint proxy statement/prospectus as the merger consideration.

Q: *What is the value of the merger consideration?*

A: In the merger, each Progenics stockholder will receive, for each share of Progenics common stock they own as of immediately prior to the completion of the merger (other than shares of Progenics common stock owned by Lantheus Holdings, Progenics or any of their respective wholly-owned subsidiaries) the merger consideration as described under “The Merger Agreement—Merger Consideration” beginning on page 151 of this joint proxy statement/prospectus.

Based on the closing price of shares of Lantheus Holdings common stock on the Nasdaq Global Market on October 1, 2019, the last trading day prior to announcement of the transaction between Lantheus Holdings and Progenics, the merger consideration represented approximately \$6.01 in value for each share of Progenics common stock. Based on the closing price of shares of Lantheus Holdings common stock on the Nasdaq Global Market on November 8, 2019, the most recent trading day prior to the date of this joint proxy statement/prospectus for which this information was available, the merger consideration represented approximately \$5.37 in value for each share of Progenics common stock. **Because Lantheus Holdings will issue 0.2502 of a share of Lantheus Holdings common stock in exchange for each share of Progenics common stock, the value of the merger consideration will depend on the market price of shares of Lantheus Holdings common stock at the time the merger is completed. The market price of shares of Lantheus Holdings common stock when Progenics stockholders receive those shares after the merger is completed will not be known at the time of the special meetings and could be greater than, less than or the same as the market price of shares of Lantheus Holdings common stock on October 1, 2019, on the date of this joint proxy statement/prospectus or at the time of the special meetings or any adjournment or postponement thereof. Because the exchange ratio is fixed and the market price of shares of Lantheus Holdings common stock has fluctuated and will continue to fluctuate, Progenics stockholders cannot be sure of the value of the merger consideration they will receive in the merger. See “Risk Factors—Risks Related to the Merger.”**

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Q: What will be the respective ownership percentages of Lantheus Holdings stockholders and Progenics stockholders and Lantheus Holdings stockholders in the combined company immediately after the completion of the merger?

A: Based on the number of fully diluted shares of Lantheus Holdings common stock and Progenics common stock outstanding as of November 8, 2019, Lantheus Holdings and Progenics estimate that, immediately after the completion of the merger, Lantheus Holdings stockholders will own approximately 65% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding) and former Progenics stockholders will own approximately 35% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding). The exact equity stake of Lantheus Holdings stockholders and Progenics stockholders in the combined company immediately following the completion of the merger will depend on the number of fully diluted shares of Lantheus Holdings common stock and Progenics common stock outstanding immediately prior to the merger.

Q: Will the merger consideration I receive in the merger increase if the results of operations of Progenics improve or if the market price of Progenics common stock increases?

A: No. The merger consideration payable for each share of Progenics common stock at closing is fixed at 0.2502 of a share of common stock of Lantheus Holdings, and the payment received at closing will not change regardless of the results of operations of Progenics or the price of publicly traded common stock of Progenics. Furthermore, as described above, the value of the merger consideration may decrease if the market price of Lantheus Holdings common stock is lower at the time the merger is completed than the market price as of the date of this joint proxy statement/prospectus.

Q: What happens if the merger is not completed?

A: If the merger agreement is not adopted by Progenics stockholders, the stock issuance is not approved by Lantheus Holdings stockholders or if the merger is not completed for any other reason, Progenics stockholders will not receive any payment for their shares of Progenics common stock in connection with the merger. Instead, Progenics will remain an independent public company, shares of its common stock will continue to be listed and traded on the Nasdaq Global Select Market and registered under the Exchange Act and Progenics will continue to file periodic reports with the SEC. If the merger agreement is terminated under specified circumstances, Progenics may be required to pay Lantheus Holdings a termination fee of \$18,340,000, which is referred to in this joint proxy statement/prospectus as the Progenics termination fee, or reimburse Lantheus Holdings for up to \$5,240,000 of its reasonable and out-of-pocket costs and expenses incurred in connection with the merger agreement and the merger, which reimbursement is referred to in this joint proxy statement/prospectus as the Lantheus Holdings expense reimbursement. In addition, if the merger agreement is terminated and, prior to such termination, Progenics has willfully and materially breached the merger agreement, Progenics will be liable for monetary damages equal to \$18,340,000, which is referred to in this joint proxy statement/prospectus as the willful breach damages payment. If the merger agreement is terminated under certain circumstances, Lantheus Holdings may be required to pay Progenics a termination fee of \$18,340,000, which is referred to in this joint proxy statement/prospectus as the Lantheus Holdings termination fee. See “The Merger Agreement—Termination Fees and Expenses” beginning on page 176 of this joint proxy statement/prospectus for a more detailed discussion of the termination fees, willful breach damages payment and expense reimbursement.

For Lantheus Holdings Stockholders

Q: What are Lantheus Holdings stockholders being asked to consider and vote on?

A: Lantheus Holdings stockholders are being asked to consider and vote on the following two proposals:

- the stock issuance proposal; and
- the Lantheus Holdings adjournment proposal.

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The approval of the stock issuance proposal by Lantheus Holdings stockholders is a condition to the obligations of Progenics and Lantheus Holdings to complete the merger. The approval of the Lantheus Holdings adjournment proposal is not a condition to the obligations of Progenics or Lantheus Holdings to complete the merger.

Q: *Does the Lantheus Holdings Board recommend that Lantheus Holdings stockholders approve the stock issuance proposal?*

A: Yes. The Lantheus Holdings Board unanimously determined that the stock issuance was advisable, fair to and in the best interests of Lantheus Holdings and its stockholders and unanimously recommends that Lantheus Holdings stockholders vote “FOR” the stock issuance proposal. See “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Lantheus Holdings’ Reasons for the Merger; Recommendation of the Lantheus Holdings Board of Directors that Lantheus Holdings Stockholders Approve the Stock Issuance” beginning on page 109 of this joint proxy statement/prospectus.

Q: *Does the Lantheus Holdings Board recommend that Lantheus Holdings stockholders approve the Lantheus Holdings adjournment proposal?*

A: Yes. The Lantheus Holdings Board unanimously recommends that Lantheus Holdings stockholders vote “FOR” the Lantheus Holdings adjournment proposal. See “Lantheus Holdings Proposal II: Adjournment of the Lantheus Holdings Special Meeting” beginning on page 183 of this joint proxy statement/prospectus.

Q: *What will happen to my shares of Lantheus Holdings common stock?*

A: Nothing. You will continue to own the same shares of Lantheus Holdings common stock that you owned prior to the effective time of the merger. As a result of the stock issuance, however, the overall ownership percentage of the current Lantheus Holdings stockholders in the combined company will be diluted.

Q: *What Lantheus Holdings stockholder vote is required for the approval of each proposal at the Lantheus Holdings special meeting?*

A: The following are the vote requirements for the proposals at the Lantheus Holdings special meeting:

- Approval of the Stock Issuance Proposal: The affirmative vote of at least a majority of the votes cast by holders of outstanding shares of Lantheus Holdings common stock at a duly called and held meeting of Lantheus Holdings stockholders at which a quorum is present. A Lantheus Holdings stockholder’s abstention from voting will have no effect on the approval of this proposal. The failure of a Lantheus Holdings stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Lantheus Holdings stockholder to vote, will have no effect on the approval of this proposal except to the extent it results in there being insufficient shares present at the Lantheus Holdings special meeting to establish a quorum.
- Approval of the Lantheus Holdings Adjournment Proposal (if necessary): The affirmative vote of the holders of a majority of the shares of Lantheus Holdings common stock present in person or represented by proxy at the Lantheus Holdings special meeting and entitled to vote thereat (assuming a quorum, as defined under Lantheus Holdings’ bylaws, is present). A Lantheus Holdings stockholder’s abstention from voting on the Lantheus Holdings adjournment proposal will have the same effect as a vote “AGAINST” the approval of the proposal. The failure of a Lantheus Holdings stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Lantheus Holdings stockholder to vote, will have no effect on the approval of this proposal except to the extent it results in

there being insufficient shares present at the Lantheus Holdings special meeting to establish a quorum. In the absence of a quorum, the Lantheus Holdings special meeting may be adjourned by the Chairperson of the meeting.

Q: *What constitutes a quorum for the Lantheus Holdings special meeting?*

A: The holders of a majority of the outstanding shares of Lantheus Holdings common stock entitled to vote being present in person or represented by proxy constitutes a quorum for the Lantheus Holdings special meeting. Shares of Lantheus Holdings common stock whose holders elect to abstain from voting will be deemed present at the Lantheus Holdings special meeting for the purpose of determining the presence of a quorum. Shares of Lantheus Holdings common stock held in “street name” with respect to which the beneficial owner fails to give voting instructions to its broker, bank or other nominee will not be deemed present at the Lantheus Holdings special meeting for the purpose of determining the presence of a quorum.

Q: *Who is entitled to vote at the Lantheus Holdings special meeting?*

A: All holders of shares of Lantheus Holdings common stock who held shares at the record date for the Lantheus Holdings special meeting (the close of business on [●], 2019) are entitled to receive notice of, and to vote at, the Lantheus Holdings special meeting. As of the close of business on the record date, there were [●] shares of Lantheus Holdings common stock outstanding. Each holder of shares of Lantheus Holdings common stock is entitled to one vote for each share of Lantheus Holdings common stock owned at the record date.

Q: *When and where is the Lantheus Holdings special meeting?*

A: The Lantheus Holdings special meeting will be held at [●], on [●], at [●], Eastern Time.

Q: *How do I vote my shares at the Lantheus Holdings special meeting?*

A: *Via the Internet or by Telephone*

If you hold shares of Lantheus Holdings common stock directly in your name as a stockholder of record, you may vote via the Internet by accessing the website shown on your proxy card or by telephone by calling the toll-free number shown on your proxy card. In order to submit a proxy to vote via the Internet or by telephone, you will need the control number on your proxy card (which is unique to each Lantheus Holdings stockholder to ensure all voting instructions are genuine and to prevent duplicate voting). Votes may be submitted via the Internet or by telephone 24 hours a day, seven days a week, and must be received by 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Lantheus Holdings special meeting. Please be aware that if you vote by telephone or over the Internet, you may incur costs such as telephone and Internet access charges for which you will be responsible.

If you hold shares of Lantheus Holdings common stock in “street name,” meaning through a broker, bank or other nominee, you may vote via the Internet or by telephone only if Internet or telephone voting is made available by your broker, bank or other nominee. Please follow the voting instructions provided by your broker, bank or other nominee with these materials.

You may vote via the Internet or by telephone until 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Lantheus Holdings special meeting.

By Mail

If you hold shares of Lantheus Holdings common stock directly in your name as a stockholder of record, in order to vote by mail, you may submit a proxy card. You will need to complete, sign and date your proxy card and return it using the postage-paid return envelope provided.

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If you hold shares of Lantheus Holdings common stock in “street name,” meaning through a broker, bank or other nominee, in order to provide voting instructions by mail you will need to complete, sign and date the voting instruction form provided by your broker, bank or other nominee with these materials and return it in the postage-paid return envelope provided. Your broker, bank or other nominee must receive your voting instruction form in sufficient time to vote your shares.

We recommend you mail your proxy timely to ensure receipt of your proxy before the date of the special meeting.

In Person

If you hold shares of Lantheus Holdings common stock directly in your name as a stockholder of record, you may vote in person at the Lantheus Holdings special meeting. Stockholders of record also may be represented by another person at the Lantheus Holdings special meeting by executing a proper proxy designating that person and having that proper proxy be presented to the inspector of election with the applicable ballot at the Lantheus Holdings special meeting.

If you hold shares of Lantheus Holdings common stock in “street name,” meaning through a broker, bank or other nominee, you must obtain a written legal proxy from that broker, bank or other nominee and present it to the judge of election with your ballot to be able to vote in person at the Lantheus Holdings special meeting. To request a legal proxy, please contact your broker, bank or other nominee.

Please carefully consider the information contained in this joint proxy statement/prospectus. Whether or not you plan to attend the Lantheus Holdings special meeting, Lantheus Holdings encourages you to vote via the Internet, by telephone or by mail so that your shares will be voted in accordance with your wishes even if you later decide not to attend the Lantheus Holdings special meeting.

Q: *If my shares of Lantheus Holdings common stock are held in “street name,” will my broker, bank or other nominee automatically vote my shares for me?*

A: No. Your broker, bank or other nominee will only be permitted to vote your shares of Lantheus Holdings common stock if you instruct your broker, bank or other nominee how to vote. You should follow the procedures provided by your broker, bank or other nominee regarding the voting of your shares of Lantheus Holdings common stock.

In general, in accordance with applicable stock exchange rules, if your shares of Lantheus Holdings common stock are held in “street name” and you do not instruct your broker how to vote your shares, your brokerage firm, in its discretion, may either leave your shares unvoted or vote your shares on routine matters. However, a broker is precluded from exercising its voting discretion with respect to non-routine or “significant” matters, such as the approval of the stock issuance proposal and the approval of the Lantheus Holdings adjournment proposal. None of the proposals at the Lantheus Holdings special meeting are routine matters. As a result, if you hold your shares in “street name” through a brokerage account, your broker will not be able to exercise its discretion to vote uninstructed shares on any of the proposals presented at the special meeting.

If a beneficial owner of shares of Lantheus Holdings common stock held in “street name” does not give voting instructions to its broker, bank or other nominee, then those shares will not be present in person or represented by proxy at the Lantheus Holdings special meeting. A beneficial owner’s failure to instruct its broker, bank or other nominee how to vote shares of Lantheus Holdings common stock will have no effect on either of the proposals to be considered at the Lantheus Holdings special meeting as described in this joint proxy statement/prospectus, except to the extent it results in there being insufficient shares present at the Lantheus Holdings special meeting to establish a quorum.

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Q: *If I submit a proxy, how will my shares covered by the proxy be voted at the Lantheus Holdings special meeting?*

A: If you correctly submit your proxy via the Internet, by telephone or by mail, the persons named in your proxy card will vote your shares in the manner you requested.

Q: *If I return a blank proxy, how will my shares be voted at the Lantheus Holdings special meeting?*

A: If you sign your proxy card and return it without indicating how you would like to vote your shares, your proxy will be voted as the Lantheus Holdings Board unanimously recommends, which is:

- “FOR” the stock issuance proposal; and
- “FOR” the Lantheus Holdings adjournment proposal.

Q: *Who may attend the Lantheus Holdings special meeting?*

A: Lantheus Holdings stockholders at the record date for the Lantheus Holdings special meeting (the close of business on [●]), or their proxy holders, their authorized representatives and guests of Lantheus Holdings may attend the Lantheus Holdings special meeting. If you plan to attend the Lantheus Holdings special meeting, you will need to provide evidence that you are a stockholder as of the close of business on the record date. This can be a copy of your proxy card or a brokerage statement showing your shares as of the close of business on the record date. You should also bring photo identification. If you hold your shares in street name and wish to vote in person at the meeting, you will need to contact the broker, bank or other nominee that holds your shares in order to obtain a legal proxy from that broker, bank or other nominee to present at the special meeting.

Q: *Can I revoke my proxy or change my voting instructions for Lantheus Holdings common stock?*

A: Yes. You may revoke your proxy or change your vote at any time before the closing of the polls at the Lantheus Holdings special meeting.

If you are a stockholder of record at the record date for the Lantheus Holdings special meeting (the close of business on [●]), you can revoke your proxy or change your vote by:

- sending a signed notice, which bears a date later than the date of the proxy you want to revoke and which is received prior to the date of the Lantheus Holdings special meeting, stating that you revoke your proxy to Lantheus Holdings, Inc., 331 Treble Cove Road, North Billerica, Massachusetts 01862;
- submitting a valid, later-dated proxy or voting instructions via the Internet or by telephone before 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Lantheus Holdings special meeting, or by mail that is received prior to the Lantheus Holdings special meeting; or
- attending the Lantheus Holdings special meeting (or, if the special meeting is adjourned or postponed, attending the applicable adjourned or postponed meeting) and voting in person, which automatically will cancel any proxy previously given, or revoking your proxy in person, but your attendance alone will not revoke any proxy previously given.

If you hold your shares in “street name” through a broker, bank or other nominee, you must contact your broker, bank or other nominee to change your vote or obtain a written legal proxy to vote your shares if you wish to cast your vote in person at the Lantheus Holdings special meeting.

Q: *What happens if I sell my Lantheus Holdings shares after the record date but before the Lantheus Holdings special meeting?*

A: The record date for the Lantheus Holdings special meeting (the close of business on [●]) is earlier than the date of the Lantheus Holdings special meeting. If you sell or otherwise transfer your shares of Lantheus

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Holdings common stock after the record date but before the date of the Lantheus Holdings special meeting, you will, unless the transferee obtains a proxy from you, retain your right to vote at the Lantheus Holdings special meeting.

Q: *Are Lantheus Holdings stockholders entitled to appraisal rights?*

A: No. Rights to fair value or appraisal, dissenters' or similar rights are not available to holders of Lantheus Holdings common stock with respect to the merger.

Q: *Who is the inspector of the election for the Lantheus Holdings special meeting?*

A: A representative of Mediant Communications, Inc. will serve as the inspector of election for the Lantheus Holdings special meeting.

Q: *Will a proxy solicitor be used for the Lantheus Holdings special meeting?*

A: Yes. Lantheus Holdings has engaged Innisfree M&A Incorporated to assist in the solicitation of proxies for the Lantheus Holdings special meeting, and Lantheus Holdings has agreed to pay them a fee of \$25,000 for services in connection with the Lantheus Holdings special meeting.

Q: *Where can I find the voting results of the Lantheus Holdings special meeting?*

A: The preliminary voting results will be announced at the Lantheus Holdings special meeting. In addition, within four business days following certification of the final voting results, Lantheus Holdings intends to file the final voting results with the SEC on a Current Report on Form 8-K.

Q: *If I am a Lantheus Holdings stockholder, whom should I call with questions?*

A: If you have any questions about the merger agreement, the merger, the stock issuance, the stock issuance proposal, the Lantheus Holdings adjournment proposal, the Lantheus Holdings special meeting or this joint proxy statement/prospectus, desire additional copies of this joint proxy statement/prospectus, proxy cards or voting instruction forms or need help voting your shares of Lantheus Holdings common stock, you should contact:



Innisfree M&A Incorporated
501 Madison Avenue, 20th Floor
New York, New York 10022
Telephone (Toll-Free): (877) 750-9497
International Callers: (412) 232-3651
Banks and brokers may call collect: (212) 750-5833

For Progenics Stockholders

Q: *What are Progenics stockholders being asked to consider and vote on?*

A: Progenics stockholders are being asked to consider and vote on the following three proposals:

- the merger agreement proposal;
- the Progenics adjournment proposal; and
- the Progenics compensation advisory proposal.

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The adoption of the merger agreement by Progenics stockholders is a condition to the obligations of Progenics and Lantheus Holdings to complete the merger. Neither the approval of the Progenics adjournment proposal nor the approval of the Progenics compensation advisory proposal is a condition to the obligations of Progenics or Lantheus Holdings to complete the merger.

Q: *Does the Progenics Board recommend that Progenics stockholders adopt the merger agreement?*

A: Yes. The Progenics Board unanimously determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger, are advisable, fair to and in the best interests of Progenics and its stockholders and unanimously recommends that Progenics stockholders vote “FOR” the merger agreement proposal. See “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Progenics’ Reasons for the Merger; Recommendation of the Progenics Board of Directors that Progenics Stockholders Adopt the Merger Agreement” beginning on page 116 of this joint proxy statement/prospectus.

Q: *Does the Progenics Board recommend that Progenics stockholders approve the Progenics adjournment proposal?*

A: Yes. The Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the Progenics adjournment proposal. See “Progenics Proposal II: Adjournment of the Progenics Special Meeting” beginning on page 184 of this joint proxy statement/prospectus.

Q: *What is the Progenics compensation advisory proposal and why am I being asked to vote on it?*

A: The SEC has adopted rules that require Progenics to seek an advisory (non-binding) vote on compensation that is tied to or based on completion of the merger and that will or may be paid or provided by Progenics to its named executive officers in connection with the merger.

Q: *Does the Progenics Board recommend that Progenics stockholders approve, on an advisory (non-binding) basis, the Progenics compensation advisory proposal?*

A: Yes. The Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the Progenics compensation advisory proposal. See “Progenics Proposal III: Advisory Vote On Merger—Related Executive Compensation Arrangements” beginning on page 185 of this joint proxy statement/prospectus.

Q: *What happens if the Progenics compensation advisory proposal is not approved?*

A: Approval of the Progenics compensation advisory proposal is not a condition to the obligations of Progenics or Lantheus Holdings to complete the merger. The vote is an advisory vote and is not binding on Progenics, the surviving company or Lantheus Holdings. If the merger is completed, the merger-related compensation may be paid to Progenics’ named executive officers to the extent payable in accordance with the terms of the compensation agreements and arrangements even if Progenics stockholders fail to approve the Progenics compensation advisory proposal.

Q: *What Progenics stockholder vote is required for the approval of each proposal at the Progenics special meeting?*

A: The following are the vote requirements for the proposals at the Progenics special meeting:

- Adoption of the Merger Agreement: The affirmative vote of the holders of at least a majority of the outstanding shares of Progenics common stock entitled to vote on this proposal. A Progenics stockholder’s abstention from voting, the failure of a Progenics stockholder who holds his or her shares

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in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee or any other failure of a Progenics stockholder to vote will have the same effect as a vote “AGAINST” this proposal.

- Approval of the Progenics Adjournment Proposal (if necessary): The affirmative vote of the holders of a majority of the shares of Progenics common stock present in person or represented by proxy at the Progenics special meeting and entitled to vote thereat (whether or not a quorum, as defined under Progenics’ by-laws, is present). A Progenics stockholder’s abstention from voting on the Progenics adjournment proposal will have the same effect as a vote “AGAINST” the approval of the proposal. The failure of a Progenics stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Progenics stockholder to vote, will have no effect on the approval of this proposal.
- Approval of the Progenics Compensation Advisory Proposal: The affirmative vote of the holders of a majority of the votes cast in person or by proxy at the Progenics special meeting. Accordingly, a Progenics stockholder’s abstention from voting will have no effect on the approval of this proposal. The failure of a Progenics stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Progenics stockholder to vote, will have no effect on the approval of this proposal except to the extent it results in there being insufficient shares present at the Progenics special meeting to establish a quorum.

Q: *What constitutes a quorum for the Progenics special meeting?*

A: The holders of a majority of the outstanding shares of Progenics common stock entitled to vote being present in person or represented by proxy constitutes a quorum for the Progenics special meeting. Shares of Progenics common stock whose holders elect to abstain from voting will be deemed present at the Progenics special meeting for the purpose of determining the presence of a quorum. Shares of Progenics common stock held in “street name” with respect to which the beneficial owner fails to give voting instructions to its broker, bank or other nominee will not be deemed present at the Progenics special meeting for the purpose of determining the presence of a quorum.

Q: *Who is entitled to vote at the Progenics special meeting?*

A: All holders of shares of Progenics common stock who held shares at the record date for the Progenics special meeting (the close of business on [●], 2019) are entitled to receive notice of, and to vote at, the Progenics special meeting. As of the close of business on the record date, there were [●] shares of Progenics common stock outstanding. Each holder of shares of Progenics common stock is entitled to one vote for each share of Progenics common stock owned at the record date.

Q: *When and where is the Progenics special meeting?*

A: The Progenics special meeting will be held at [●], on [●], at [●], Eastern Time.

Q: *How do I vote my shares at the Progenics special meeting?*

A: *Via the Internet or by Telephone*

If you hold shares of Progenics common stock directly in your name as a stockholder of record, you may vote via the Internet or by telephone by calling by following the directions on the enclosed proxy. In order to submit a proxy to vote via the Internet or by telephone, you will need the control number on your proxy card (which is unique to each Progenics stockholder to ensure all voting instructions are genuine and to prevent duplicate voting). Votes may be submitted via the Internet or by telephone 24 hours a day, seven

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days a week, and must be received by 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Progenics special meeting. Please be aware that if you vote by telephone or over the Internet, you may incur costs such as telephone and Internet access charges for which you will be responsible.

If you hold shares of Progenics common stock in “street name,” meaning through a broker, bank or other nominee, you may vote via the Internet or by telephone only if Internet or telephone voting is made available by your broker, bank or other nominee. Please follow the voting instructions provided by your broker, bank or other nominee with these materials.

You may vote via the Internet or by telephone until 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Progenics special meeting.

By Mail

If you hold shares of Progenics common stock directly in your name as a stockholder of record, in order to vote by mail, you may submit a proxy card. You will need to complete, sign and date your proxy card and return it using the postage-paid return envelope provided.

If you hold shares of Progenics common stock in “street name,” meaning through a broker, bank or other nominee, in order to provide voting instructions by mail you will need to complete, sign and date the voting instruction form provided by your broker, bank or other nominee with these materials and return it in the postage-paid return envelope provided. Your broker, bank or other nominee must receive your voting instruction form in sufficient time to vote your shares.

We recommend you mail your proxy timely to ensure receipt of your proxy before the date of the special meeting.

In Person

If you hold shares of Progenics common stock directly in your name as a stockholder of record, you may vote in person at the Progenics special meeting. Stockholders of record also may be represented by another person at the Progenics special meeting by executing a proper proxy designating that person and having that proper proxy be presented to the inspector of election with the applicable ballot at the Progenics special meeting.

If you hold shares of Progenics common stock in “street name,” meaning through a broker, bank or other nominee, you must obtain a written legal proxy from that broker, bank or other nominee and present it to the judge of election with your ballot to be able to vote in person at the Progenics special meeting. To request a legal proxy, please contact your broker, bank or other nominee.

Please carefully consider the information contained in this joint proxy statement/prospectus. Whether or not you plan to attend the Progenics special meeting, Progenics encourages you to vote via the Internet, by telephone or by mail so that your shares will be voted in accordance with your wishes even if you later decide not to attend the Progenics special meeting.

Q: *If my shares of Progenics common stock are held in “street name,” will my broker, bank or other nominee automatically vote my shares for me?*

A: No. Your broker, bank or other nominee will only be permitted to vote your shares of Progenics common stock if you instruct your broker, bank or other nominee how to vote. You should follow the procedures provided by your broker, bank or other nominee regarding the voting of your shares of Progenics common stock.

In general, in accordance with applicable stock exchange rules, if your shares of Progenics common stock are held in “street name” and you do not instruct your broker how to vote your shares, your brokerage firm, in its discretion, may either leave your shares unvoted or vote your shares on routine matters. However, a broker is precluded from exercising its voting discretion with respect to non-routine or “significant” matters,

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such as the adoption of the merger agreement, the approval of the Progenics adjournment proposal and the approval of the Progenics compensatory advisory proposal. None of the proposals at the Progenics special meeting are routine matters. As a result, if you hold your shares in “street name” through a brokerage account, your broker will not be able to exercise its discretion to vote uninstructed shares on any of the proposals presented at the special meeting.

If a beneficial owner of shares of Progenics common stock held in “street name” does not give voting instructions to its broker, bank or other nominee, then those shares will not be present in person or represented by proxy at the Progenics special meeting. A beneficial owner’s failure to instruct its broker, bank or other nominee how to vote shares of Progenics common stock held in “street name” will have (1) the same effect as a vote “AGAINST” the merger agreement proposal; (2) no effect on the proposal to approve the Progenics adjournment proposal; and (3) no effect on the Progenics compensation advisory proposal, except to the extent it results in there being insufficient shares present at the Progenics special meeting to establish a quorum.

Q: *If I submit a proxy, how will my shares covered by the proxy be voted at the Progenics special meeting?*

A: If you correctly submit your proxy via the Internet, by telephone or by mail, the persons named in your proxy card will vote your shares in the manner you requested.

Q: *If I return a blank proxy, how will my shares be voted at the Progenics special meeting?*

A: If you sign your proxy card and return it without indicating how you would like to vote your shares, your proxy will be voted as the Progenics Board unanimously recommends, which is:

- “FOR” the merger agreement proposal;
- “FOR” the Progenics adjournment proposal; and
- “FOR” the Progenics compensation advisory proposal.

Q: *Who may attend the Progenics special meeting?*

A: Progenics stockholders at the record date for the Progenics special meeting (the close of business on [●]), or their proxy holders, their authorized representatives and guests of Progenics may attend the Progenics special meeting. If you plan to attend the Progenics special meeting, you will need to provide evidence that you are a stockholder as of the close of business on the record date. This can be a copy of your proxy card or a brokerage statement showing your shares as of the close of business on the record date. You should also bring photo identification. If you hold your shares in street name and wish to vote in person at the meeting, you will need to contact the broker, bank or other nominee that holds your shares in order to obtain a legal proxy from that broker, bank or other nominee.

Q: *Can I revoke my proxy or change my voting instructions for Progenics common stock?*

A: Yes. You may revoke your proxy or change your vote at any time before the closing of the polls at the Progenics special meeting.

If you are a stockholder of record at the record date for the Progenics special meeting (the close of business on [●]), you can revoke your proxy or change your vote by:

- sending a signed notice, which bears a date later than the date of the proxy you want to revoke and which is received prior to the date of the Progenics special meeting, stating that you revoke your proxy to Progenics Pharmaceuticals, Inc., One World Trade Center, 47th Floor, New York, New York 10007;
- submitting a valid, later-dated proxy or voting instructions via the Internet or by telephone before 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Progenics special meeting, or by mail that is received prior to the Progenics special meeting; or

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- attending the Progenics special meeting (or, if the special meeting is adjourned or postponed, attending the applicable adjourned or postponed meeting) and voting in person, which automatically will cancel any proxy previously given, or revoking your proxy in person, but your attendance alone will not revoke any proxy previously given.

If you hold your shares in “street name” through a broker, bank or other nominee, you must contact your broker, bank or other nominee to change your vote or obtain a written legal proxy to vote your shares if you wish to cast your vote in person at the Progenics special meeting.

Q: *What happens if I sell my shares of Progenics common stock after the record date but before the Progenics special meeting?*

A: The record date for the Progenics special meeting (the close of business on [●]) is earlier than the date of the Progenics special meeting and earlier than the date that the merger is expected to be completed. If you sell or otherwise transfer your shares of Progenics common stock after the record date but before the date of the Progenics special meeting, you will, unless the transferee obtains a proxy from you, retain your right to vote at the Progenics special meeting. However, you will not have the right to receive the merger consideration to be received by Progenics stockholders in the merger. In order to receive the merger consideration, you must hold your shares immediately prior to completion of the merger.

Q: *Are Progenics stockholders entitled to appraisal rights?*

A: No. Rights to fair value or appraisal, dissenters’ or similar rights are not available to holders of Progenics common stock with respect to the merger.

Q: *Who is the inspector of the election for the Progenics special meeting?*

A: A representative of First Coast Results, Inc. will serve as the independent inspector of election for the Progenics special meeting.

Q: *Will a proxy solicitor be used for the Progenics special meeting?*

A: Yes. Progenics has engaged MacKenzie Partners, Inc. to assist in the solicitation of proxies for the Progenics special meeting, and Progenics has agreed to pay them a fee of \$125,000.

Q: *Where can I find the voting results of the Progenics special meeting?*

A: The preliminary voting results will be announced at the Progenics special meeting. In addition, within four business days following certification of the final voting results, Progenics intends to file the final voting results with the SEC on a Current Report on Form 8-K.

Q: *Should I send in my Progenics share certificates now?*

A: No. Progenics stockholders should not send in their share certificates at this time. After completion of the merger, Lantheus Holdings’ exchange agent will send you a letter of transmittal and instructions for exchanging your shares of Progenics common stock for the merger consideration. The shares of Lantheus Holdings common stock you receive in the merger will be issued in book-entry form and, unless otherwise requested, physical certificates will not be issued. Lantheus Holdings stockholders will keep their existing share certificates, if any, and will not be required to take any action with respect to their certificates. See “The Merger Agreement—Procedures for Exchanging Progenics Common Stock for Lantheus Holdings Common Stock” beginning on page 152 of this joint proxy statement/prospectus.

Q: As a holder of options issued by Progenics to purchase Progenics common stock, what will I receive in the merger?

A: At the effective time of the merger, each outstanding and unexercised option to purchase shares of Progenics common stock under any Progenics stock plan, which is referred to in this joint proxy statement/prospectus as a Progenics stock option, will be assumed by Lantheus Holdings on the same terms and conditions and converted into an option to purchase the number of shares of Lantheus Holdings common stock (rounded down to the nearest whole share) equal to the product obtained by multiplying the total number of shares of Progenics common stock that were subject to such Progenics stock option immediately prior to the effective time of the merger by 0.2502, (the exchange ratio in the merger), at a per-share exercise price (rounded up to the nearest whole cent) equal to the quotient obtained by dividing the exercise price per share of Progenics common stock at which such Progenics stock option was exercisable immediately prior to the effective time of the merger by 0.2502 (the exchange ratio in the merger). Except for these adjustments, each assumed option will be subject to the same terms and conditions (including any applicable vesting and acceleration provisions) as applied to the corresponding Progenics stock option immediately prior to the effective time of the merger. See “The Merger Agreement—Treatment of Progenics Stock Options” beginning on page 153 of this joint proxy statement/prospectus for a more detailed explanation.

Q: Is the transaction expected to be taxable to Progenics stockholders?

A: The merger is intended to qualify as a “reorganization” within the meaning of Section 368(a) of U.S. Internal Revenue Code of 1986, as amended, which is referred to in this joint proxy statement/prospectus as the Code, and Progenics stockholders are generally not expected to recognize any gain or loss for U.S. federal income tax purposes on the exchange of shares of Progenics common stock for the merger consideration pursuant to the merger, except with respect to any cash received in lieu of any fractional shares.

Each Progenics stockholder is urged to read the discussion in the section entitled “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Material U.S. Federal Income Tax Consequences” beginning on page 147 of this joint proxy statement/prospectus and to consult its tax advisor to determine the particular U.S. federal, state or local or non-U.S. income or other tax consequences to it of the merger.

Q: If I am a Progenics stockholder, whom should I call with questions?

A: If you have any questions about the merger agreement, the merger, the merger agreement proposal, the Progenics adjournment proposal, the Progenics compensation advisory proposal, the Progenics special meeting or this joint proxy statement/prospectus, desire additional copies of this joint proxy statement/prospectus, proxy cards or voting instruction forms or need help voting your shares of Progenics common stock, you should contact:

MacKenzie Partners, Inc.
1407 Broadway, 27th Floor
New York, New York 10018
Toll-Free: (800) 322-2885
or
(212) 929-5500
Email: proxy@mackenziepartners.com

For Both Lantheus Holdings Stockholders and Progenics Stockholders

Q: What if I hold shares in both Progenics and Lantheus Holdings?

A: If you are both a Progenics stockholder and a Lantheus Holdings stockholder, you will receive separate packages of proxy materials from each company. A vote as a Progenics stockholder for the merger

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agreement proposal (or any other proposal to be considered at the Progenics special meeting) will not constitute a vote as a Lantheus Holdings stockholder to approve the stock issuance proposal (or any other proposal to be considered at the Lantheus Holdings special meeting), and vice versa. **Therefore, please complete, sign and date and return all proxy cards and/or voting instructions that you receive from Progenics or Lantheus Holdings, or submit your proxy or voting instructions for each set of voting materials over the Internet or by telephone in order to ensure that all of your shares are voted.**

Q: *Is completion of the merger subject to any conditions?*

A: Yes. Lantheus Holdings and Progenics are not required to complete the merger unless a number of conditions are satisfied (or, to the extent permitted by applicable law, waived by the party entitled to waive such condition). These conditions include the adoption of the merger agreement by Progenics stockholders and the approval of the stock issuance proposal by Lantheus Holdings stockholders. For a more complete summary of the conditions that must be satisfied (or, to the extent permitted by applicable law, waived) prior to completion of the merger, see “The Merger Agreement—Conditions to Completion of the Merger” beginning on page 153 of this joint proxy statement/prospectus.

Q: *When do you expect to complete the merger?*

A: As of the date of this joint proxy statement/prospectus, Progenics and Lantheus Holdings expect to complete the merger in the first quarter of 2020, subject to the adoption of the merger agreement by Progenics stockholders, the approval of the stock issuance proposal by Lantheus Holdings stockholders, and the satisfaction (or, to the extent permitted by applicable law, waiver) of the other conditions that must be satisfied (or, to the extent permitted by applicable law, waived) prior to completion of the merger. However, no assurance can be given as to when, or if, the merger will be completed.

Q: *What risks should I consider in deciding whether to vote in favor of the merger proposal and/or the stock issuance proposal?*

A: You should carefully review the risks and uncertainties discussed under the heading “Risk Factors” and elsewhere in this joint proxy statement/prospectus and Part I, Item 1A, “Risk Factors” in each company’s Annual Report on Form 10-K for the year ended December 31, 2018, as updated by their respective Quarterly Reports on Form 10-Q for the quarterly periods ended September 30, 2019, June 30, 2019 and March 31, 2019, and future filings with the SEC, each of which is on file or will be filed with the SEC, which maintains a website located at www.sec.gov with this information, and all of which is incorporated by reference into this joint proxy statement/prospectus, as well as the section of this joint proxy statement/prospectus entitled “Risk Factors,” which sets forth certain risks and uncertainties related to the merger, risks and uncertainties to which the combined company’s business will be subject, and risks and uncertainties to which each of Lantheus Holdings and Progenics, as an independent company, is subject.

Q: *What do I need to do now?*

A: Carefully read and consider the information contained in and incorporated by reference into this joint proxy statement/prospectus in its entirety, including its annexes. Then, please promptly vote your shares of Progenics common stock and/or shares of Lantheus Holdings common stock, as applicable, which you may do by:

- completing, dating, signing and returning the enclosed proxy card for the applicable company in the accompanying postage-paid return envelope;

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- submitting your proxy via the Internet or by telephone by following the instructions included on your proxy card for such company; or
- attending the applicable special meeting and voting by ballot in person.

If you hold shares in “street name” through a broker, bank or other nominee, please instruct your broker, bank or other nominee to vote your shares by following the instructions that the broker, bank or other nominee provides to you with these materials.

SUMMARY

This summary highlights selected information from this joint proxy statement/prospectus. It may not contain all of the information that is important to you. You are urged to read carefully the entire joint proxy statement/prospectus and the other documents attached to or referred to in this joint proxy statement/prospectus in order to fully understand the merger agreement, the proposed merger and the other transactions contemplated by the merger agreement. See “Where You Can Find More Information” beginning on page 222 of this joint proxy statement/prospectus. Each item in this summary refers to the page of this joint proxy statement/prospectus on which the more detailed discussion of that subject begins.

The Companies (see page 68)

Lantheus Holdings

Lantheus Holdings was incorporated under the laws of the State of Delaware in November 2007 under the name ACP Lantern Holdings, Inc. In 2008, ACP Lantern Holdings, Inc. changed its name to Lantheus MI Holdings, Inc. and, in 2014, changed its name again to Lantheus Holdings, Inc. Lantheus Holdings is a leader in the development, manufacturing, and commercialization of innovative diagnostic medical imaging agents and products across a range of imaging modalities, including echocardiography and nuclear imaging. Lantheus Holdings’ commercial products are used by cardiologists, nuclear physicians, radiologists, internal medicine physicians, technologists and sonographers working in a variety of clinical settings.

Lantheus Holdings’ portfolio of commercial products includes DEFINITY®, the leading ultrasound contrast imaging agent based on revenue and usage in the U.S., and TechneLite, a self-contained system or generator of technetium-99m, a radioactive isotope used by radiopharmacies to prepare various nuclear imaging agents. Since its launch in 2001, DEFINITY® has been used in imaging procedures in more than 11.5 million patients throughout the world. Additionally, as of December 31, 2018, Lantheus Holdings estimates that TechneLite had approximately one third of the U.S. technetium generator market.

Lantheus Holdings common stock, par value \$0.01 per share, (NASDAQ: LNTH) is listed on the Nasdaq Global Market under the symbol “LNTH.” The principal executive offices of Lantheus Holdings are located at 331 Treble Cove Road, North Billerica, Massachusetts 01862; its telephone number is (978) 671-8001; and its website is www.lantheus.com. Information on Lantheus Holdings’ Internet website is not incorporated by reference into or otherwise part of this joint proxy statement/prospectus.

This joint proxy statement/prospectus incorporates important business and financial information about Lantheus Holdings from other documents that are not included in or delivered with this joint proxy statement/prospectus. For a list of the documents that are incorporated by reference, see “Where You Can Find More Information”.

Progenics

Progenics, which has been listed on Nasdaq since 1997, was incorporated in Delaware in 1986, commenced principal operations in 1988, and throughout has been engaged primarily in research and development efforts, establishing corporate collaborations and related activities. Progenics is an oncology company focused on the development and commercialization of innovative targeted medicines and artificial intelligence to find, fight and follow cancer. Progenics’ pipeline includes therapeutic agents designed to precisely target cancer (AZEDRA®, 1095 and PSMA TTC), as well as a prostate-specific membrane antigen (“PSMA”) targeted imaging agents for prostate cancer (PyL™ and 1404).

Highlights of Progenics’ recent progress include the first commercial revenue for AZEDRA®, completion of enrollment of the PyL™ pivotal Phase 3 trial, and dosing of the first patient in the 1095 open label Phase 2 trial.

Progenics common stock, par value \$0.0013 per share, is listed on the Nasdaq Global Select Market under the symbol “PGNX.” The principal executive offices of Progenics are located at One World Trade Center, 47th Floor, New York, New York 10007; its telephone number is (646) 975-2500; and its website is www.progenics.com. Information on Progenics’ Internet website is not incorporated by reference into or otherwise part of this joint proxy statement/prospectus.

This joint proxy statement/prospectus incorporates important business and financial information about Progenics from other documents that are not included in or delivered with this joint proxy statement/prospectus. For a list of the documents that are incorporated by reference, see “Where You Can Find More Information” beginning on page 222 of this joint proxy statement/prospectus.

Plato Merger Sub, Inc.

Merger Sub was incorporated under the laws of the State of Delaware on September 26, 2019, and is a wholly-owned subsidiary of Lantheus Holdings. Merger Sub was formed solely for the purpose of completing the merger. Merger Sub has not carried on any activities or operations to date, except for activities incidental to its formation and activities undertaken in connection with the merger. By operation of the merger, Merger Sub will be merged with and into Progenics, with Progenics surviving the merger as a wholly-owned subsidiary of Lantheus Holdings.

The principal executive offices of Merger Sub are located at 331 Treble Cove Road, North Billerica, Massachusetts 01862, and its telephone number is (978) 671-8001.

The Merger (see page 150)

On October 1, 2019, Lantheus Holdings, Merger Sub and Progenics entered into the merger agreement. Subject to the terms and conditions of the merger agreement and in accordance with applicable law, Merger Sub will be merged with and into Progenics, with Progenics continuing as the surviving corporation and a wholly-owned subsidiary of Lantheus Holdings. Upon completion of the merger, shares of Progenics common stock will no longer be publicly traded, will be delisted from the Nasdaq Global Select Market and will be deregistered under the Exchange Act, and Progenics will no longer be required to file periodic reports with the SEC.

A copy of the merger agreement is attached as Annex A to this joint proxy statement/prospectus. **You should read the merger agreement carefully and in its entirety because it is the legal document that governs the merger.**

Special Meeting of Stockholders of Lantheus Holdings (see page 70)

Meeting. The Lantheus Holdings special meeting will be held at [●], on [●], at [●], Eastern Time. At the Lantheus Holdings special meeting, Lantheus Holdings stockholders will be asked to consider and vote on the following proposals:

- the stock issuance proposal; and
- the Lantheus Holdings adjournment proposal.

Record Date. The Lantheus Holdings Board has fixed the close of business on [●] as the record date for the Lantheus Holdings special meeting. Only Lantheus Holdings stockholders of record at the record date are entitled to receive notice of, and to vote at, the Lantheus Holdings special meeting or any adjournment or postponement of the Lantheus Holdings special meeting, unless a new record date is set in connection with an adjournment or postponement of the Lantheus Holdings special meeting. As of the close of business on the record date, there

were [●] shares of Lantheus Holdings common stock, \$0.01 par value per share, outstanding and entitled to vote at the Lantheus Holdings special meeting. Each holder of Lantheus Holdings common stock is entitled to one vote for each share of Lantheus Holdings common stock owned as of the close of business on the record date.

Quorum. The presence at the Lantheus Holdings special meeting, in person or by proxy, of the holders of a majority of the outstanding shares of Lantheus Holdings common stock as of the close of business on the record date (the close of business on [●]) and entitled to vote at the meeting will constitute a quorum. Elections to abstain from voting will be deemed present at the Lantheus Holdings special meeting for the purpose of determining the presence of a quorum. Shares of Lantheus Holdings common stock held in “street name” with respect to which the beneficial owner fails to give voting instructions to its broker, bank or other nominee, and shares of Lantheus Holdings common stock with respect to which the beneficial owner otherwise fails to vote, will not be deemed present at the Lantheus Holdings special meeting for the purpose of determining the presence of a quorum. There must be a quorum for the vote on the stock issuance proposal to be taken at the Lantheus Holdings special meeting. Failure of a quorum to be present at the Lantheus Holdings special meeting will necessitate an adjournment of the meeting and will subject Lantheus Holdings to additional expense.

Required Vote. The affirmative vote of at least a majority of the votes cast by holders of outstanding shares of Lantheus Holdings common stock at a duly called and held meeting of Lantheus Holdings stockholders at which a quorum is present is required to approve the stock issuance proposal in connection with the merger. **Lantheus Holdings cannot complete the merger unless its stockholders approve the stock issuance proposal.** A majority of the votes cast means that the number of votes cast “for” the stock issuance proposal must exceed the number of votes cast “against.” A Lantheus Holdings stockholder’s abstention from voting on the stock issuance, the failure of a Lantheus Holdings stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Lantheus Holdings stockholder to vote, will have no effect on the approval of the proposal except to the extent it results in there being insufficient shares present at the Lantheus Holdings special meeting to establish a quorum.

Approval of the Lantheus Holdings adjournment proposal, assuming a quorum, as defined under Lantheus Holdings’ bylaws, is present, requires the affirmative vote of the holders of a majority of the shares of Lantheus Holdings common stock present in person or represented by proxy at the Lantheus Holdings special meeting and entitled to vote thereat. For purposes of the Lantheus Holdings adjournment proposal, “shares of Lantheus Holdings common stock present in person or represented by proxy” on the proposal consist of votes “for” or “against” as well as elections to abstain from voting on the proposal. As a result, a Lantheus Holdings stockholder’s abstention from voting on the Lantheus Holdings adjournment proposal will have the same effect as a vote “AGAINST” the approval of the proposal. The failure of a Lantheus Holdings stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Lantheus Holdings stockholder to vote, will have no effect on the approval of this proposal except to the extent it results in there being insufficient shares present at the Lantheus Holdings special meeting to establish a quorum.

Stock Ownership of and Voting by Lantheus Holdings Directors and Executive Officers (see page 192). As of the close of business on the record date, Lantheus Holdings’ directors and executive officers and their affiliates beneficially owned and had the right to vote in the aggregate [●] shares of Lantheus Holdings common stock at the Lantheus Holdings special meeting, which represents approximately [●] of the shares of Lantheus Holdings common stock entitled to vote at the Lantheus Holdings special meeting.

Each of Lantheus Holdings’ directors and executive officers is expected, as of the date of this joint proxy statement/prospectus, to vote his or her shares of Lantheus Holdings common stock “FOR” the stock issuance proposal and “FOR” the Lantheus Holdings adjournment proposal, although none of Lantheus Holdings’ directors and executive officers have entered into any agreement requiring them to do so.

Special Meeting of Stockholders of Progenics (see page 76)

Meeting. The Progenics special meeting will be held at [●], on [●], at [●], Eastern Time. At the Progenics special meeting, Progenics stockholders will be asked to consider and vote on the following proposals:

- the merger agreement;
- the Progenics adjournment proposal; and
- the Progenics compensation advisory proposal.

Record Date. The Progenics Board has fixed the close of business on [●] as the record date for the Progenics special meeting. Only Progenics stockholders of record at the record date are entitled to receive notice of, and to vote at, the Progenics special meeting or any adjournment or postponement of the Progenics special meeting, unless a new record date is set in connection with an adjournment or postponement of the Progenics special meeting. As of the close of business on the record date, there were [●] shares of Progenics common stock outstanding and entitled to vote at the Progenics special meeting. Each holder of shares of Progenics common stock is entitled to one vote for each share of Progenics common stock owned as of the close of business on the record date.

Quorum. The presence at the Progenics special meeting, in person or by proxy, of the holders of a majority of the outstanding shares of Progenics common stock at the record date (the close of business on [●]) and entitled to vote at the meeting will constitute a quorum. Elections to abstain from voting will be deemed present at the Progenics special meeting for the purpose of determining the presence of a quorum. Shares of Progenics common stock held in “street name” with respect to which the beneficial owner fails to give voting instructions to its broker, bank or other nominee, and shares of Progenics common stock with respect to which the beneficial owner otherwise fails to vote, will not be deemed present at the Progenics special meeting for the purpose of determining the presence of a quorum. There must be a quorum for the vote on the merger agreement proposal and the vote on the Progenics compensation advisory proposal to be taken at the Progenics special meeting. Failure of a quorum to be present at the Progenics special meeting will necessitate an adjournment of the meeting and will subject Progenics to additional expense.

Required Vote. The affirmative vote of the holders of a majority of the shares of Progenics common stock outstanding and entitled to vote thereon is required to approve the merger agreement proposal. **Progenics cannot complete the merger and the merger consideration will not be paid unless its stockholders approve the merger agreement proposal and the other closing conditions specified in the merger agreement are met.** A Progenics stockholder’s abstention from voting, the failure of a Progenics stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee or any other failure of a Progenics stockholder to vote will have the same effect as a vote “AGAINST” the proposal to adopt the merger agreement.

Approval of the Progenics adjournment proposal (whether or not a quorum, as defined under Progenics’ by-laws, is present) requires the affirmative vote of the holders of a majority of the shares of Progenics common stock present in person or represented by proxy at the Progenics special meeting and entitled to vote thereat. For purposes of the Progenics adjournment proposal, “shares of Progenics common stock present in person or represented by proxy” consist of votes “for” or “against” as well as elections to abstain from voting on the proposal. As a result, a Progenics stockholder’s abstention from voting on the Progenics adjournment proposal will have the same effect as a vote “AGAINST” the approval of the proposal. The failure of a Progenics stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Progenics stockholder to vote, will have no effect on the approval of this proposal.

Approval, on an advisory (non-binding) basis, of the Progenics compensation advisory proposal (assuming a quorum, as defined under Progenics' by-laws, is present) requires the affirmative vote of the holders of a majority of the votes cast in person or by proxy at the Progenics special meeting. For purposes of the Progenics compensation advisory proposal, "votes cast" means votes "for" or "against" the proposal. A Progenics stockholder's abstention from voting, the failure of a Progenics stockholder who holds his or her shares in "street name" through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Progenics stockholder to vote, will have no effect on the approval of the compensation advisory proposal, except to the extent it results in there being insufficient shares present at the Progenics special meeting to establish a quorum.

Stock Ownership of and Voting by Progenics Directors and Executive Officers (see page 194)

As of the close of business on the record date, Progenics' directors and executive officers and their affiliates beneficially owned and had the right to vote in the aggregate [●] shares of Progenics common stock at the Progenics special meeting, which represents approximately [●]% of the shares of Progenics common stock entitled to vote at the Progenics special meeting.

Each of Progenics' directors and executive officers is expected, as of the date of this joint proxy statement/prospectus, to vote his or her shares of Progenics common stock "FOR" the proposal to adopt the merger agreement, "FOR" the Progenics adjournment proposal and "FOR" the Progenics compensation advisory proposal, although none of Progenics' directors or executive officers have entered into any agreement requiring them to do so.

What Progenics Stockholders Will Receive in the Merger (see page 151)

If the merger is completed, Progenics stockholders (other than holders of shares of Progenics common stock owned by Lantheus Holdings, Progenics or any of their respective wholly-owned subsidiaries) will be entitled to receive, in exchange for each share of Progenics common stock that they own immediately prior to the completion of the merger, 0.2502 of a share of Lantheus Holdings common stock.

The exchange ratio is fixed, which means that it will not change between now and the date of the merger, regardless of whether the market price of either shares of Lantheus Holdings common stock or shares of Progenics common stock changes. Therefore, the value of the share consideration will depend on the market price of shares of Lantheus Holdings common stock at the time Progenics stockholders receive shares of Lantheus Holdings common stock in the merger. Based on the closing price of shares of Lantheus Holdings common stock on the Nasdaq Global Market on October 1, 2019, the last trading day prior to announcement of the transaction between Lantheus Holdings and Progenics, the merger consideration represented approximately \$6.01 in value for each share of Progenics common stock. Based on the closing price of shares of Lantheus Holdings common stock on the Nasdaq Global Market on November 8, 2019, the most recent trading day prior to the date of this joint proxy statement/prospectus for which this information was available, the merger consideration represented approximately \$5.37 in value for each share of Progenics common stock. **The market price of shares of Lantheus Holdings common stock has fluctuated since the date of the announcement of the merger agreement and will continue to fluctuate from the date of this joint proxy statement/prospectus to the date of the Progenics special meeting and the date the merger is completed and thereafter. The market price of shares of Lantheus Holdings common stock when received by Progenics stockholders after the merger is completed could be greater than, less than or the same as the market price of shares of Lantheus Holdings common stock on the date of this joint proxy statement/prospectus or at the time of the Progenics special meeting or any adjournment or postponement thereof.**

Treatment of Progenics Stock Options (see page 153)

At the effective time of the merger, each outstanding and unexercised option to purchase shares of Progenics common stock under any Progenics stock plan, which is referred to in this joint proxy statement/prospectus as a Progenics stock option, will be assumed by Lantheus Holdings on the same terms and conditions and converted into an option to purchase the number of shares of Lantheus Holdings common stock (rounded down to the nearest whole share) equal to the product obtained by multiplying the total number of shares of Progenics common stock that were subject to such Progenics stock option immediately prior to the effective time of the merger by 0.2502 (the exchange ratio in the merger), at a per-share exercise price (rounded up to the nearest whole cent) equal to the quotient obtained by dividing the exercise price per share of Progenics common stock at which such Progenics stock option was exercisable immediately prior to the effective time of the merger by 0.2502 (the exchange ratio in the merger). Except for these adjustments, each assumed option will be subject to the same terms and conditions (including any applicable vesting and acceleration provisions) as applied to the corresponding Progenics stock option immediately prior to the effective time of the merger.

Recommendation of the Lantheus Holdings Board of Directors (see page 70)

The Lantheus Holdings Board unanimously determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger and the stock issuance, are advisable, fair to and in the best interests of Lantheus Holdings and its stockholders. **The Lantheus Holdings Board unanimously recommends that Lantheus Holdings stockholders vote “FOR” the stock issuance proposal.** For the factors considered by the Lantheus Holdings Board in reaching this decision, see “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Lantheus Holdings’ Reasons for the Merger; Recommendation of the Lantheus Holdings Board of Directors that Lantheus Holdings Stockholders Approve the Stock Issuance” beginning on page 109 of this joint proxy statement/prospectus.

The Lantheus Holdings Board unanimously recommends that Lantheus Holdings stockholders vote “FOR” the Lantheus Holdings adjournment proposal. See “Lantheus Holdings Proposal II: Adjournment of the Lantheus Holdings Special Meeting” beginning on page 183 of this joint proxy statement/prospectus.

Recommendation of the Progenics Board of Directors (see page 76)

The Progenics Board unanimously determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger, are advisable, fair to and in the best interests of Progenics and its stockholders. **The Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the merger agreement proposal.** For the factors considered by the Progenics Board in reaching this decision, see “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Progenics’ Reasons for the Merger; Recommendation of the Progenics Board of Directors that Progenics Stockholders Adopt the Merger Agreement” beginning on page 116 of this joint proxy statement/prospectus.

The Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the Progenics adjournment proposal. See “Progenics Proposal II: Adjournment of the Progenics Special Meeting” beginning on page 184 of this joint proxy statement/prospectus.

In addition, the Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the Progenics compensation advisory proposal. See “Progenics Proposal III: Advisory Vote On Merger—Related Executive Compensation Arrangements” beginning on page 185 of this joint proxy statement/prospectus.

Opinion of Lantheus Holdings' Financial Advisor (see page 120)

Lantheus Holdings retained SVB Leerink Partners LLC, which is referred to in this proxy statement/prospectus as SVB Leerink, as its financial advisor in connection with this transaction. The Lantheus Holdings Board selected SVB Leerink to act as Lantheus Holdings' financial advisor based on SVB Leerink's qualifications, reputation, experience and expertise in the biopharmaceuticals industry, its knowledge of and involvement in recent transactions in the biopharmaceutical industry, and its relationship and familiarity with Lantheus Holdings and its business. SVB Leerink is an internationally recognized investment banking firm that has substantial experience in transactions similar to this transaction. In connection with this engagement, Lantheus Holdings requested that SVB Leerink evaluate the fairness, from a financial point of view, to Lantheus Holdings of the exchange ratio provided for in the merger agreement. On October 1, 2019, SVB Leerink rendered to the Lantheus Holdings Board its oral opinion, which was subsequently confirmed by delivery of a written opinion dated October 1, 2019, that, as of such date and based upon and subject to the various assumptions, qualifications and limitations upon the review undertaken by SVB Leerink in preparing its opinion, the exchange ratio provided for in the merger agreement was fair, from a financial point of view, to Lantheus Holdings.

SVB Leerink's financial advisory services and opinion were provided for the information and assistance of the members of the Lantheus Holdings Board (in their capacity as directors and not in any other capacity) in connection with and for purposes of the Lantheus Holdings Board's consideration of this transaction and the SVB Leerink opinion addressed only the fairness, from a financial point of view, as of the date thereof, to Lantheus Holdings of the exchange ratio provided for in the merger agreement. The SVB Leerink opinion did not address any other term or aspect of the merger agreement or this transaction and does not constitute a recommendation to any stockholder of Lantheus Holdings as to whether or how such holder should vote with respect to the merger or otherwise act with respect to this transaction or any other matter. SVB Leerink has provided its written consent to the reproduction of its opinion in this proxy statement/prospectus.

The full text of the SVB Leerink written opinion, dated October 1, 2019, which describes the assumptions, qualifications and limitations upon the review undertaken by SVB Leerink in preparing its opinion, is attached hereto as Annex B and is incorporated by reference herein. Lantheus Holdings stockholders should read the opinion carefully in its entirety.

Opinion of Progenics' Financial Advisor (see page 129)

Progenics retained Jefferies LLC, which is referred to in this joint proxy statement/prospectus as Jefferies, as financial advisor in connection with a possible sale, disposition or certain other business transactions involving Progenics. In connection with this engagement, the Progenics Board requested that Jefferies evaluate the fairness, from a financial point of view, of the exchange ratio set forth in the merger agreement. At a meeting of the Progenics Board held on October 1, 2019 to evaluate the merger, Jefferies rendered an oral opinion, confirmed by delivery of a written opinion dated October 1, 2019, to the Progenics Board to the effect that, as of that date and based on and subject to various assumptions made, procedures followed, matters considered and limitations and qualifications on the review undertaken as described in its opinion, the exchange ratio set forth in the merger agreement was fair, from a financial point of view, to the holders of Progenics common stock.

The full text of Jefferies' opinion, which describes various assumptions made, procedures followed, matters considered and limitations and qualifications on the review undertaken by Jefferies, is attached as Annex C to this joint proxy statement/prospectus and is incorporated herein by reference. Jefferies' opinion was provided for the use and benefit of the Progenics Board (in its capacity as such) in its consideration of the merger. Jefferies' opinion did not address the relative merits of the merger as compared to any alternative transaction or opportunity that might be available to Progenics, nor did it address the underlying business decision by Progenics to engage in the merger or the terms of the merger agreement or the documents referred to therein. Jefferies'

opinion did not constitute a recommendation as to how any holder of Progenics common stock should vote with respect to the merger or any matter related thereto.

Ownership of Lantheus Holdings Common Stock After the Merger (see page 82)

Based on the number of shares of Progenics common stock outstanding as of November 8, 2019, Lantheus Holdings expects to issue approximately 21,722,636 shares of Lantheus Holdings common stock to Progenics stockholders pursuant to the merger. The actual number of shares of Lantheus Holdings common stock to be issued pursuant to the merger will be determined at the completion of the merger based on the number of shares of Progenics common stock outstanding at such time. In addition, shares of Lantheus Holdings common stock may be issued from time to time following the effective time of the merger to holders of Progenics stock options on the terms set forth in the merger agreement. See “The Merger Agreement—Treatment of Progenics Stock Options” beginning on page 153 of this joint proxy statement/prospectus for a more detailed explanation. Based on the number of fully diluted shares of Lantheus Holdings common stock and Progenics common stock outstanding as of November 8, 2019, it is estimated that, immediately after the completion of the merger, Lantheus Holdings stockholders will own approximately 65% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding) and former Progenics stockholders will own approximately 35% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding). The exact equity stake of Lantheus Holdings stockholders and Progenics stockholders in the combined company immediately following the completion of the merger will depend on the number of fully diluted shares of Lantheus Holdings common stock and Progenics common stock outstanding immediately prior to the merger.

Governance Matters Following Completion of the Merger (see page 153)

At the effective time of the merger, it is expected that the Lantheus Holdings Board will be composed of 11 members. In addition to the individuals serving on the Lantheus Holdings Board at the effective time of the merger, the Lantheus Holdings Board will appoint one individual as mutually agreed upon in good faith by Progenics and Lantheus Holding. The designee must have been serving as a director of Progenics as of the date of the merger agreement and must be reasonably approved by the Nominating and Corporate Governance Committee of the Lantheus Holdings Board. Bradley L. Campbell is currently expected to serve as a member of the Lantheus Holdings Board following completion of the merger. See “The Merger Agreement—Governance Matters Following Completion of the Merger” beginning on page 153 for further information.

Interests of Progenics’ Directors and Executive Officers in the Merger (see page 180)

In considering the recommendation of the Progenics Board to adopt the merger agreement, Progenics stockholders should be aware that Progenics’ directors and executive officers have interests in the merger that may be different from, or in addition to, the interests of Progenics stockholders generally, including accelerated vesting of their Progenics stock options in connection with the merger (or, in the case of executive officers, a qualifying termination of employment on or following the merger), certain retention payments that may be made to Progenics’ executive officers (other than Mr. Baker) in connection with the closing of the merger, and rights to ongoing indemnification and insurance coverage. The Progenics Board was aware of these interests and considered them, among other matters, in evaluating and negotiating the merger agreement, in reaching its decision to approve the merger agreement and the transactions contemplated by the merger agreement, including the merger, and in recommending to Progenics stockholders that the merger agreement be adopted.

These interests are described in further detail under “Interests of Progenics’ Directors and Executive Officers in the Merger” and “The Merger Agreement—Indemnification and Insurance” beginning on pages 180 and 169, respectively, of this joint proxy statement/prospectus.

Listing of Lantheus Holdings Common Stock; Delisting and Deregistration of Shares of Progenics Common Stock (see page 153)

The merger agreement obligates Lantheus Holdings to use its reasonable best efforts to cause the Lantheus Holdings common stock to be issued in the merger to be listed on the Nasdaq Global Market, subject to official notice of issuance, prior to the closing date of the merger. See “The Merger Agreement—Listing of Lantheus Holdings Common Stock” beginning on page 153 for further information. Approval for listing on the Nasdaq Global Market of the Lantheus Holdings common stock, subject to official notice of issuance, is a condition to the obligations of Progenics and Lantheus Holdings to complete the merger as described under “The Merger Agreement—Conditions to Completion of the Merger” beginning on page 153 of this joint proxy statement/prospectus. If the merger is completed, shares of Progenics common stock will no longer be publicly traded, will be delisted from the Nasdaq Global Select Market and will be deregistered under the Exchange Act, and Progenics will no longer be required to file period reports with the SEC.

No Appraisal or Dissenters’ Rights Available to Progenics Stockholders (see page 146)

No right to fair value or appraisal, dissenters’ or similar rights will be available to holders of Progenics common stock with respect to the merger. For more information, please see the section titled “No Appraisal or Dissenters’ Rights for Progenics Stockholders” beginning on page 146 of this joint proxy statement/prospectus.

Completion of the Merger Is Subject to Certain Conditions (see page 153)

As more fully described in this joint proxy statement/prospectus and in the merger agreement, the obligation of each of Lantheus Holdings and Merger Sub, on the one hand, and Progenics, on the other hand, to complete the merger is subject to the satisfaction or, to the extent permitted by applicable law, waiver of a number of conditions.

Mutual Conditions to Completion. The obligation of each of Progenics, Lantheus Holdings and Merger Sub to complete the merger is subject to the satisfaction or, to the extent permitted by applicable law, waiver on or prior to the closing date of the following conditions:

- approval of the merger agreement proposal by the affirmative vote of the holders of at least a majority of the outstanding shares of Progenics common stock;
- approval of the stock issuance proposal by the affirmative vote of the holders of at least a majority of the votes cast by the holders of outstanding shares of Lantheus Holdings common stock;
- the absence of any law enacted or order issued by a governmental authority of competent jurisdiction having the effect of making the merger illegal or otherwise prohibiting completion of the merger;
- effectiveness of the registration statement for the Lantheus Holdings common stock to be issued in the merger (of which this joint proxy statement/prospectus forms a part) and the absence of any stop order suspending the effectiveness or any proceedings for that purpose initiated or threatened by the SEC;
- approval for listing on the Nasdaq Global Market of the Lantheus Holdings common stock to be issued in the merger and such other shares to be reserved for issuance in connection with the merger; and
- any applicable waiting period (and any extension thereof) under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, which is referred to in this joint proxy statement/prospectus as the HSR Act, has expired or been terminated. Each of Lantheus Holdings and Progenics filed its respective HSR Act notification and report with respect to the merger on October 16, 2019. The United States Federal Trade Commission, which is referred to in this joint proxy statement/prospectus as the FTC, granted early termination of the HSR Act waiting period on October 25, 2019.

Additional Conditions to Completion for the Benefit of Lantheus Holdings and Merger Sub. In addition, the obligations of Lantheus Holdings and Merger Sub to complete the merger are subject to the satisfaction of, or waiver by Lantheus Holdings, on or prior to the closing date of the following conditions:

- the accuracy of the representations and warranties of Progenics in the merger agreement as of the date of the merger agreement and as of the closing date (except to the extent in either case that such representations and warranties speak as of another date), subject to the applicable materiality standards set forth in the merger agreement and more fully described in “The Merger Agreement—Conditions to Completion of the Merger” beginning on page 153 of this joint proxy statement/prospectus;
- Progenics having performed or complied in all material respects with all agreements and covenants required to be performed by it under the merger agreement on or prior to the closing date;
- the absence of any fact, circumstance, condition, development, change, event, occurrence or effect that has had or would reasonably be expected to have, individually or in the aggregate with all other facts, circumstances, conditions, developments, changes, events, occurrences or effects, a material adverse effect on Progenics since the date of the merger agreement;
- Lantheus Holdings having received a certificate from the chief executive officer or the chief financial officer of Progenics confirming the satisfaction of the conditions described in the preceding three bullets; and
- Lantheus Holdings having received a tax opinion from White & Case LLP, counsel to Lantheus Holdings, which is referred to in this joint proxy statement/prospectus as White & Case, or another nationally recognized tax or accounting firm in the United States reasonably acceptable to the parties.

Additional Conditions to Completion for the Benefit of Progenics. In addition, the obligation of Progenics to complete the merger is subject to the satisfaction of the following conditions:

- the accuracy of the representations and warranties of Lantheus Holdings and Merger Sub in the merger agreement as of the date of the merger agreement and as of the closing date (except to the extent in either case that such representations and warranties speak as of another date), subject to the applicable materiality standards set forth in the merger agreement and more fully described in “The Merger Agreement—Conditions to Completion of the Merger” beginning on page 153 of this joint proxy statement/prospectus;
- each of Lantheus Holdings and Merger Sub having performed or complied in all material respects with all agreements and covenants required to be performed by it under the merger agreement on or prior to the closing date;
- Progenics having received a certificate from the chief executive officer or the chief financial officer of Lantheus Holdings confirming the satisfaction of the conditions described in the preceding two bullets; and
- Progenics having received a tax opinion from O’Melveny & Myers LLP, counsel to Progenics, which is referred to in this joint proxy statement/prospectus as O’Melveny, or another nationally recognized tax or accounting firm in the United States reasonably acceptable to the parties.

Neither Lantheus Holdings nor Progenics can be certain when, or if, the conditions to the merger will be satisfied or waived, or that the merger will be completed.

The Merger May Not Be Completed Without the Required Regulatory Approvals (see page 145)

Completion of the merger is conditioned upon, among other things, the expiration or termination of the waiting period (and any extension thereof) applicable to the merger under the HSR Act, which has been obtained by grant

of early termination of the HSR Act waiting period on October 25, 2019. Notwithstanding the grant of early termination, at any time before or after the merger is completed, the Antitrust Division of the United States Department of Justice, which is referred to in this joint proxy statement/prospectus as the Antitrust Division, the FTC, or U.S. state attorneys general could take action under the antitrust laws in opposition to the merger, including seeking to enjoin completion of the merger, condition completion of the merger upon the divestiture of assets, or impose restrictions on post-merger operations. Any such requirements or restrictions may prevent or delay completion of the merger or may reduce the anticipated benefits of the merger.

Lantheus Holdings and Progenics Expect the Merger to be Completed in the First Quarter of 2020 (see page 151)

The merger is required to be completed three business days after the conditions to its completion have been satisfied or, to the extent permitted by applicable law, waived, unless otherwise mutually agreed by the parties.

As of the date of this joint proxy statement/prospectus, Lantheus Holdings and Progenics expect the merger to be completed in the first quarter of 2020. However, there can be no assurance as to when, or if, the merger will be completed.

No Solicitation by Progenics or Lantheus Holdings (see page 163)

As more fully described in this joint proxy statement/prospectus and in the merger agreement, and subject to the terms and conditions set forth in the merger agreement, each of Progenics and Lantheus Holdings has agreed not to, and not to authorize or permit any of its subsidiaries to, and each of Progenics and Lantheus Holdings will use its reasonable best efforts to cause its and its subsidiaries' respective officers, directors, employees, accountants, counsel, financial advisors, consultants, financing sources and other advisors or representatives, which are collectively referred to in this joint proxy statement/prospectus as representatives, not to, directly or indirectly, (i) initiate or solicit or knowingly facilitate, knowingly induce or knowingly encourage any inquiry or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, a takeover proposal (as defined in "The Merger Agreement—No Solicitation," beginning on page 163 of this joint proxy statement/prospectus), (ii) enter into, continue or otherwise participate in any discussions or negotiations regarding, furnish to any person any information or data with respect to, or cooperate in any way that would otherwise reasonably be expected to lead to, any proposal or offer that constitutes, or would reasonably be expected to lead to, any takeover proposal, (iii) submit to the stockholders of Progenics or Lantheus Holdings, as applicable, for their approval or adoption any takeover proposal, or (iv) agree or publicly announce an intention to take any of the foregoing actions. Further, except as otherwise described in "The Merger Agreement—No Solicitation," beginning on page 163 of this joint proxy statement/prospectus, the Progenics Board or the Lantheus Holdings Board, as applicable, or any respective committee thereof, may not approve, declare advisable, adopt or recommend, or publicly propose to approve, declare advisable, adopt or recommend, or allow each of Progenics and Lantheus Holdings or its respective subsidiaries to execute or enter into any agreement that is intended to, or would reasonably be expected to lead to, any takeover proposal.

Each of Progenics and Lantheus Holdings has agreed to, and to cause its respective subsidiaries to, and to use reasonable best efforts to cause its and their respective representatives to, immediately cease and cause to be terminated any existing activities, discussions or negotiations with any persons conducted prior to the date of the merger agreement with respect to any takeover proposal and request the prompt return or destruction of any confidential information previously furnished to such persons in connection therewith and immediately terminate the access of each such person to any electronic data room maintained by or on behalf of each party or its subsidiaries. Progenics, Lantheus Holdings and their respective subsidiaries may not modify, amend or terminate, or waive, release, or fail to enforce or assign any provisions of, any confidentiality agreement (other than any standstill provision therein) to which it is a party relating to any takeover proposal or any inquiry, offer or

proposal in connection therewith and will enforce, to the fullest extent permitted under applicable law, the provisions of any such agreement (other than any standstill provision therein).

Notwithstanding the foregoing, if at any time prior to the approval of the merger agreement proposal by Progenics stockholders, in the case of Progenics, or at any time prior to the approval of the stock issuance proposal by Lantheus Holdings stockholders, in the case of Lantheus Holdings, Progenics or Lantheus Holdings, as applicable, receives a *bona fide* written takeover proposal after the date of the merger agreement which was not solicited and has not resulted from a breach of the solicitation restrictions described in “The Merger Agreement—No Solicitation,” beginning on page 163 of this joint proxy statement/prospectus, each of Progenics or Lantheus Holdings, as applicable, is permitted to:

- furnish information with respect to Progenics or Lantheus Holdings, as applicable, and its respective subsidiaries to the person making such takeover proposal and its representatives pursuant to and in accordance with a confidentiality agreement containing provisions no less restrictive in any substantive respect than those contained in the confidentiality agreement between Progenics and Lantheus Holdings; except that such confidentiality agreement need not contain a standstill provision, so long as the information provided to such person has previously been provided or is provided to Progenics or Lantheus Holdings, as applicable, prior to or substantially concurrently with (and in any event on the same calendar day as) the time it is provided to such person; and
- participate in discussions or negotiations with such person or its representatives regarding such takeover proposal.

However, Progenics and Lantheus Holdings may only take the actions described immediately above if the Progenics Board or the Lantheus Holdings Board, as applicable, determines in good faith (after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation), that (i) after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation, such takeover proposal is, or would reasonably be expected to lead to, a superior proposal, which is defined in “The Merger Agreement—No Solicitation” beginning on page 163 of this joint proxy statement/prospectus, and (ii) after consultation with its outside legal counsel, the failure to furnish such information or participate in such discussions or negotiations with respect to such takeover proposal would reasonably be expected to be inconsistent with its fiduciary duties under applicable law.

For more information on the solicitation restrictions binding on Progenics and Lantheus Holdings, see “The Merger Agreement—No Solicitation” beginning on page 163 of this joint proxy statement/prospectus.

Termination of the Merger Agreement (see page 174)

As more fully described in this joint proxy statement/prospectus and in the merger agreement, and subject to the terms and conditions set forth in the merger agreement, the merger agreement may be terminated at any time before the effective time of the merger, whether before or after Progenics stockholders have approved the merger agreement proposal or Lantheus Holdings stockholders have approved the stock issuance proposal, in the following circumstances:

- by mutual written consent of Lantheus Holdings and Progenics;
- by either Lantheus Holdings or Progenics, if:
 - the merger has not been completed by July 1, 2020, which is referred to in this joint proxy statement/prospectus as an outside date termination event;
 - a governmental authority of competent jurisdiction has enacted a law or issued an order having the effect of making the merger illegal or otherwise prohibiting completion of the merger, in each case, that has become final and nonappealable;

- Progenics stockholders fail to adopt the merger agreement upon a vote taken on the merger agreement proposal at the Progenics special meeting, which is referred to in this joint proxy statement/prospectus as a Progenics stockholder vote termination event; or
- Lantheus Holdings stockholders fail to approve the stock issuance upon a vote taken on the stock issuance proposal at the Lantheus Holdings special meeting, which is referred to in this joint proxy statement/prospectus as a Lantheus Holdings stockholder vote termination event.

However, the right to terminate the merger agreement pursuant to the foregoing reasons will not be available to Progenics or Lantheus Holdings if that party's failure to fulfill any obligation under the merger agreement has been the primary cause of, or directly resulted in, the failure of any such condition.

- by Lantheus Holdings, if:
 - Progenics has breached or failed to perform any of its representations, warranties or covenants contained in the merger agreement, which breach or failure to perform would result in a failure to satisfy any condition to completion of the merger related to the accuracy of its representations and warranties or the performance of its covenants and agreements, and such breach is incapable of being cured by Progenics prior to July 1, 2020 or is not cured by the earlier of 30 days following written notice to Progenics by Lantheus Holdings of such breach and July 1, 2020, which is referred to in this joint proxy statement/prospectus as a Progenics breach termination event. However, the right to terminate the merger agreement in respect of an inaccuracy of any representation or warranty or the failure to perform any covenant or agreement will not be available to Lantheus Holdings or Merger Sub if Lantheus Holdings or Merger Sub is then in breach of its representations, warranties, covenants or agreements that would cause the applicable condition to completion of the merger related to accuracy of its representations and warranties or performance of its covenants and agreements not to be satisfied;
 - Progenics or any of its subsidiaries or their respective representatives has willfully breached any of their respective obligations described under "The Merger Agreement—No Solicitation," beginning on page 163 of this joint proxy statement/prospectus, which is referred to in this joint proxy statement/prospectus as a Progenics solicitation termination event; or
 - the Progenics Board (i) fails to include its recommendation to stockholders of Progenics to adopt the merger agreement in this joint proxy statement/prospectus, (ii) makes a change in recommendation, (iii) makes any public recommendation in connection with a tender offer or exchange offer that is subject to Regulation 14D under the Exchange Act other than a recommendation in a Solicitation/Recommendation Statement on Schedule 14D-9 against such tender offer or exchange offer and other than a "stop, look and listen" notice of the type contemplated by Rule 14d-9(f) promulgated under the Exchange Act, or (iv) if a takeover proposal (other than a takeover proposal subject to Regulation 14D) has been publicly announced or disclosed (other than by Lantheus Holdings, its affiliates or its representatives), fails to recommend against such takeover proposal or fails to reaffirm its recommendation on or prior to the earlier of (A) 10 business days after such takeover proposal has been publicly announced or disclosed and (B) five business days prior to the Progenics special meeting, which is referred to in this joint proxy statement/prospectus, in any case of (i), (ii), (iii) or (iv), as a Progenics change in recommendation termination event. However, Lantheus Holdings will not have the right to terminate the merger agreement pursuant to clauses (i), (ii) or (iv) in this paragraph if Progenics stockholders have adopted the merger agreement at its special meeting.
- by Progenics, if:
 - Lantheus Holdings or Merger Sub has breached or failed to perform any of its representations, warranties or covenants contained in the merger agreement, which breach or failure to perform

would result in a failure to satisfy any condition to completion of the merger related to the accuracy of its representations and warranties or the performance of its covenants and agreements, and such breach is incapable of being cured by Lantheus Holdings or Merger Sub prior to July 1, 2020 or is not cured by the earlier of 30 days following written notice to Lantheus Holdings or Merger Sub by Progenics of such breach and July 1, 2020, which is referred to in this joint proxy statement/prospectus as a Lantheus Holdings breach termination event. However, the right to terminate the merger agreement in respect of an inaccuracy of any representation or warranty or the failure to perform any covenant or agreement will not be available to Progenics if Progenics is then in breach of its representations, warranties, covenants or agreements that would cause the applicable condition to completion of the merger related to accuracy of its representations and warranties or performance of its covenants and agreements not to be satisfied;

- Lantheus Holdings or any of its subsidiaries or their respective representatives has willfully breached any of their respective obligations described under “The Merger Agreement—No Solicitation,” beginning on page 163 of this joint proxy statement/prospectus of this joint proxy statement/prospectus, which is referred to in this joint proxy statement/prospectus as a Lantheus Holdings solicitation termination event; or
- the Lantheus Holdings Board (i) fails to include its recommendation to stockholders of Lantheus Holdings to approve the stock issuance proposal in this joint proxy statement/prospectus, (ii) makes a change in recommendation, (iii) makes any public recommendation in connection with a tender offer or exchange offer that is subject to Regulation 14D under the Exchange Act other than a recommendation in a Solicitation/Recommendation Statement on Schedule 14D-9 against such tender offer or exchange offer and other than a “stop, look and listen” notice of the type contemplated by Rule 14d-9(f) promulgated under the Exchange Act, or (iv) if a takeover proposal (other than a takeover proposal subject to Regulation 14D) has been publicly announced or disclosed (other than by Progenics, its affiliates or its representatives), fails to recommend against such takeover proposal or fails to reaffirm its recommendation on or prior to the earlier of (A) 10 business days after such takeover proposal has been publicly announced or disclosed and (B) five business days prior to the Lantheus Holdings special meeting, which is referred to in this joint proxy statement/prospectus, in any case of (i), (ii), (iii) or (iv), as a Lantheus Holdings change in recommendation termination event. However, Progenics will not have the right to terminate the merger agreement pursuant to clauses (i), (ii) or (iv) in this paragraph if Lantheus Holdings stockholders has approved the stock issuance proposal at its special meeting.

Termination Fees and Expenses (see page 176)

As more fully described in this joint proxy statement/prospectus and in the merger agreement, and subject to the terms and conditions set forth in the merger agreement, Progenics has agreed to pay Lantheus Holdings the Progenics termination fee of \$18,340,000 if the merger agreement is terminated under any of the following circumstances (such fee only to be paid once):

- a Progenics solicitation termination event;
- a Progenics change in recommendation termination event;
- a Progenics stockholder vote termination event if, at the time of such termination, Lantheus Holdings has the right to terminate the merger agreement pursuant to a Progenics solicitation termination event or a Progenics change in recommendation termination event; or
- an outside date termination event, a Progenics breach termination event, or a Progenics stockholder vote termination event, if (i) in the case of an outside date termination event or a Progenics breach termination event, a takeover proposal shall have been made to the Progenics Board or become

publicly known, and not withdrawn, prior to the date of such termination, or, in the case of a Progenics stockholder vote termination event, a takeover proposal shall have been made to the Progenics Board or become publicly known, and not publicly withdrawn, prior to the date of the Progenics special meeting, and (ii) in each case, within 12 months of such termination, Progenics enters into a definitive agreement with any third party to consummate, or consummates, a takeover proposal (where references to 15% in the definition of “takeover proposal” will be deemed to be references to 50%).

As more fully described in this joint proxy statement/prospectus and in the merger agreement, and subject to the terms and conditions set forth in the merger agreement, Lantheus Holdings has agreed to pay Progenics the Lantheus Holdings termination fee of \$18,340,000 if the merger agreement is terminated under any of the following circumstances (such fee only to be paid once):

- a Lantheus Holdings solicitation termination event;
- a Lantheus Holdings change in recommendation termination event;
- a Lantheus Holdings stockholder vote termination event if, at the time of such termination, Progenics has the right to terminate the merger agreement pursuant to a Lantheus Holdings solicitation termination event or a Lantheus Holdings change in recommendation termination event; or
- an outside date termination event, a Lantheus Holdings breach termination event, or a Lantheus Holdings stockholder vote termination event, if (i) in the case of an outside date termination event or a Lantheus Holdings breach termination event, a takeover proposal shall have been made to the Lantheus Holdings Board or become publicly known, and not withdrawn, prior to the date of such termination, or, in the case of a Lantheus Holdings stockholder vote termination event, a takeover proposal shall have been made to the Lantheus Holdings Board or become publicly known, and not publicly withdrawn, prior to the date of the Lantheus Holdings special meeting and (ii) in each case, within 12 months of such termination, Lantheus Holdings enters into a definitive agreement with any third party to consummate, or consummates, a takeover proposal (where references to 15% in the definition of “takeover proposal” will be deemed to be references to 50%).

In the event that Progenics willfully breaches or fails to perform any of its covenants under the merger agreement, which breach or failure results in a material breach of the merger agreement (as finally determined by a court of competent jurisdiction), following any termination of the merger agreement, Progenics will pay to Lantheus Holdings damages of \$18,340,000, which is referred to in this joint proxy statement/prospectus as the willful breach damages payment. However, Progenics will not be required to pay the willful breach damages payment if it has already paid the Progenics termination fee.

If a Progenics stockholder vote termination event occurs and Lantheus Holdings is not otherwise entitled to the Progenics termination fee described under this section, then Progenics will pay to Lantheus Holdings the amount equal to the reasonable and documented out-of-pocket expenses incurred by Lantheus Holdings, Merger Sub and the other Lantheus Holdings subsidiaries in connection with the merger, such amount not to exceed \$5,240,000, which is referred to in this joint proxy statement/prospectus as the Lantheus Holdings expense reimbursement. If Progenics has reimbursed Lantheus Holdings for such expenses, a subsequent payment of the Progenics termination fee or the willful breach damages payment will be net of the amount of such expenses previously paid by Progenics.

See “The Merger Agreement—Termination Fees and Expenses” beginning on page 176 of this joint proxy statement/prospectus for a more complete description of the circumstances under which Progenics or Lantheus Holdings will be required to pay a termination fee, willful breach damages payment or expense reimbursement.

Enforcement (see page 178)

Under the merger agreement, each of Lantheus Holdings and Progenics is entitled to an injunction or injunctions to prevent breaches of the merger agreement and to enforce specifically the terms and provisions of the merger agreement in any court of competent jurisdiction. The right of specific enforcement is an integral part of the transactions and without that right, neither Lantheus Holdings nor Progenics would have entered into the merger agreement.

Material U.S. Federal Income Tax Consequences (see page 147)

The merger is intended to qualify as a “reorganization” within the meaning of Section 368(a) of the Code, and it is a condition to the respective obligations of each of Lantheus Holdings and Progenics to complete the merger that it receives a legal opinion to that effect. Subject to the limitations and qualifications described in “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Material U.S. Federal Income Tax Consequences,” Progenics stockholders are generally not expected to recognize any gain or loss for U.S. federal income tax purposes on the exchange of shares of Progenics common stock for the merger consideration pursuant to the merger, except with respect to any cash received in lieu of any fractional shares.

Each Progenics stockholder is urged to read the discussion in the section entitled “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Material U.S. Federal Income Tax Consequences” beginning on page 147 of this joint proxy statement/prospectus and to consult its tax advisor to determine the particular U.S. federal, state or local or non-U.S. income or other tax consequences to it of the merger.

Accounting Treatment (see page 149)

The unaudited pro forma condensed combined financial statements have been prepared using the acquisition method of accounting under Accounting Standards Codification Topic 805, Business Combinations (“ASC 805”) with Lantheus Holdings being the accounting acquirer in the proposed merger with Progenics. Lantheus Holdings will record certain Progenics assets to be acquired and liabilities to be assumed at fair market value at the date of completion of the merger. Any excess of the purchase price (as described under “Note 5. Estimate of consideration expected to be transferred in the merger and preliminary purchase price allocation” under “Notes to the Unaudited Pro Forma Condensed Combined Financial Statements” beginning on page 55 of this joint proxy statement/prospectus) over the net fair value of such assets and liabilities will be recorded as goodwill.

Rights of Progenics Stockholders Will Change as a Result of the Merger (see page 197)

Progenics stockholders will have different rights once they become Lantheus Holdings stockholders due to differences between the organizational documents of Lantheus Holdings and Progenics. These differences are described in more detail under “Comparison of Stockholder Rights” beginning on page 197 of this joint proxy statement/prospectus.

Risk Factors (see page 34)

You should also carefully consider the risks that are described in the section entitled “Risk Factors” beginning on page 34 of this joint proxy statement/prospectus.

RISK FACTORS

In addition to the other information contained or incorporated by reference into this joint proxy statement/prospectus, including the matters addressed in “Cautionary Statement Regarding Forward-Looking Statements” beginning on page 66 of this joint proxy statement/prospectus, you should carefully consider the following risk factors in determining whether to vote for the merger agreement proposal or the stock issuance proposal, as applicable. You also should read and consider the risk factors associated with each of the businesses of Lantheus Holdings and Progenics because these risk factors may affect the operations and financial results of the combined company. These risks may be found under Part I, Item 1A, “Risk Factors” in each company’s Annual Report on Form 10-K for the year ended December 31, 2018, and under Part II, Item 1A, “Risk Factors” in each Company’s Quarterly Reports on Form 10-Q for the quarterly periods ended September 30, 2019, June 30, 2019 and March 31, 2019, and future filings with the SEC, each of which is on file or will be filed with the SEC and all of which are incorporated by reference into this joint proxy statement/prospectus.

Risks Related to the Merger

The exchange ratio is fixed and will not be adjusted in the event of any changes in either Lantheus Holdings’ or Progenics’ stock price. As a result, Progenics stockholders cannot be sure of the value of the merger consideration they will receive in the merger.

Upon completion of the merger, each share of Progenics common stock outstanding immediately prior to the completion of the merger (other than shares of Progenics common stock owned by Lantheus Holdings, Progenics or any of their respective wholly-owned subsidiaries) will be converted into the right to receive 0.2502 of a share of Lantheus Holdings common stock without interest. This exchange ratio will not be adjusted for changes in the market price of either Lantheus Holdings common stock or Progenics common stock between the date the merger agreement was signed and completion of the merger. As a result, changes in the price of Lantheus Holdings common stock prior to the completion of the merger will affect the value of the Lantheus Holdings common stock that Progenics stockholders will receive upon completion of the merger.

The market price of shares of Lantheus Holdings common stock has fluctuated since the date of the announcement of the merger agreement and may continue to change through the date of each of the Lantheus Holdings and the Progenics special meetings and the date the merger is completed. For example, based on the range of closing prices of Lantheus Holdings common stock during the period from October 1, 2019, the last full trading day before the public announcement of the merger, through November 8, 2019, the latest practicable trading date before the date of this joint proxy statement/prospectus, the exchange ratio resulted in an implied value of the merger consideration ranging from a high of approximately \$5.38 to a low of approximately \$4.63 for each share of Progenics common stock. The actual market value of the Lantheus Holdings common stock received by holders of Progenics common stock may result in an implied value of the merger consideration outside this range.

Stock price changes may result from a variety of factors, including, among others, general market and economic conditions, changes in Lantheus Holdings’ and Progenics’ respective businesses, operations and prospects, risks inherent in their respective businesses, changes in market assessments of the likelihood that the merger will be completed and/or the value that may be generated by the merger, and changes with respect to expectations regarding the timing of the merger and regulatory considerations. At the time of the Progenics special meeting, Progenics stockholders will not know with certainty the value of the shares of Lantheus Holdings common stock that they will receive upon completion of the merger.

The merger is subject to the expiration or termination of applicable waiting periods and the receipt of approvals, consents or clearances from regulatory authorities that may impose conditions that could have an adverse effect on Lantheus Holdings, Progenics or the combined company or, if not obtained, could prevent completion of the merger.

Before the merger may be completed, any approvals, consents or clearances required in connection with the merger must have been obtained, in each case, under applicable law. Completion of the merger is conditioned upon, among other things, the expiration or termination of the waiting period (and any extension thereof) applicable to the merger under the HSR Act, which, as noted above, has been obtained by grant of early termination of the HSR Act waiting period on October 25, 2019. Notwithstanding the grant of early termination, at any time before or after the merger is completed, the Antitrust Division, the FTC, or U.S. state attorneys general could take action under the antitrust laws in opposition to the merger, including seeking to enjoin completion of the merger, condition completion of the merger upon the divestiture of assets, or impose restrictions on post-merger operations. Any such requirements or restrictions may prevent or delay completion of the merger or may reduce the anticipated benefits of the merger.

The merger is subject to conditions, some or all of which may not be satisfied, or completed on a timely basis, if at all. Failure to complete the merger could have material adverse effects on Lantheus Holdings' and Progenics' businesses.

The completion of the merger is subject to a number of conditions in addition to the termination or expiration of any applicable waiting period (and any extension thereof) under the HSR Act, including, among other conditions: (i) approval of the merger agreement proposal by Progenics stockholders at the Progenics special meeting; (ii) approval of the stock issuance proposal by Lantheus Holdings stockholders at the Lantheus Holdings special meeting; (iii) approval for the listing on the Nasdaq Global Market of the shares of Lantheus Holdings common stock to be issued in the merger and such other shares to be reserved for issuance in connection with the merger; (iv) the absence of any law enacted or order issued by a governmental authority of competent jurisdiction having the effect of making the merger illegal or otherwise prohibiting completion of the merger; (v) the accuracy of the representations and warranties made in the merger agreement by the other party, subject to the applicable materiality standards set forth in the merger agreement; (vi) the absence of any fact, circumstance, condition, development, change, event, occurrence or effect that has had or would reasonably be expected to have, individually or in the aggregate with all other facts, circumstances, conditions, developments, changes, events, occurrences or effects, a material adverse effect on Progenics since the date of the merger agreement; (vii) performance or compliance in all material respects by the other party with all the agreements and covenants required to be performed by such party under the merger agreement on or prior to the closing date; (viii) Lantheus Holdings' and Progenics' respective receipts of tax opinions from White & Case (or another nationally recognized tax or accounting firm in the United States reasonably acceptable to the parties) and O'Melveny (or another nationally recognized tax or accounting firm in the United States reasonably acceptable to the parties); and (ix) the effectiveness of the registration statement on Form S-4 relating to the merger and no stop order suspending the effectiveness of the registration statement and no proceedings for such purpose initiated or threatened by the SEC.

In addition, the merger agreement contains certain termination rights for both Lantheus Holdings and Progenics, including, among other things, (i) if the merger has not been completed by July 1, 2020, (ii) if the required approval of Lantheus Holdings stockholders or the Progenics stockholders is not obtained, (iii) if the other party willfully breaches its non-solicitation obligations in the merger agreement, (v) if the other party materially breaches its representations, warranties or covenants which breach or failure to perform would result in a failure to satisfy any condition to completion of the merger related to the accuracy of its representations and warranties or the performance of its covenants and agreements, and fails to cure such breach, (vi) if any law or order prohibiting the merger or the stock issuance has become final and nonappealable, or (vii) if the board of directors of the other party changes its recommendation in connection with the merger. If the merger is not completed, the ongoing business of Lantheus Holdings and Progenics may be materially adversely affected and, without

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realizing any of the benefits that they could have realized had the merger been completed, they will be subject to a number of risks, including the following:

- Lantheus Holdings and Progenics may experience negative reactions from the financial markets, including negative impacts on trading prices of Lantheus Holdings common stock and Progenics common stock, and from their respective customers, vendors, regulators and employees;
- Progenics may be required to pay Lantheus Holdings a termination fee of \$18,340,000 if the merger agreement is terminated under certain circumstances, and Lantheus Holdings may be required to pay Progenics a termination fee of \$18,340,000 if the merger agreement is terminated under certain other circumstances (see “The Merger Agreement—Termination Fees and Expenses” beginning on page 176 of this joint proxy statement/prospectus);
- if the merger agreement is terminated and the Lantheus Holdings Board or the Progenics Board seeks another business combination, Lantheus Holdings stockholders and Progenics stockholders cannot be certain that Lantheus Holdings or Progenics will be able to find a party willing to enter into a transaction on terms equivalent to or more attractive than the terms that the other party has agreed to in the merger agreement;
- Lantheus Holdings and Progenics will be required to pay certain transaction expenses and other costs incurred in connection with the merger, whether or not the merger is completed, including regulatory filings and legal, accounting, financial advisory, consulting and other advisory expenses, employee benefit-related expenses and filing and printing fees, and for Progenics, in certain circumstances, certain fees and expenses of Lantheus Holdings in connection with the Lantheus Holdings expense reimbursement (see “The Merger Agreement—Termination Fees and Expenses” beginning on page 176 of this joint proxy statement/prospectus); and
- matters relating to the merger (including arranging integration planning) will require substantial commitments of time and resources by Lantheus Holdings and Progenics management and the expenditure of significant funds in the form of fees and expenses, which would otherwise have been devoted to day-to-day operations and other opportunities that may have been beneficial to either Lantheus Holdings or Progenics as an independent company.

In addition, if the merger is not completed, Lantheus Holdings and Progenics could be subject to litigation related to any failure to complete the merger or related to any enforcement proceeding commenced against either Lantheus Holdings or Progenics to perform its obligations under the merger agreement. If any such risk materializes, it could adversely impact either Lantheus Holdings’ or Progenics’ ongoing business. Similarly, delays in the completion of the merger could, among other things, result in additional transaction costs, loss of revenue or other negative effects associated with uncertainty about completion of the merger and cause them not to realize some or all of the benefits that they expect to achieve if the merger is successfully completed within its expected timeframe. We cannot assure you that the conditions to the closing of the merger will be satisfied or waived or that the merger will be completed.

Uncertainties associated with the merger may cause a loss of management personnel and other key employees, and Lantheus Holdings and Progenics may have difficulty attracting and motivating management personnel and other key employees, which could adversely affect the future business and operations of the combined company.

Lantheus Holdings and Progenics are each dependent on the experience and industry knowledge of their respective management personnel and other key employees to execute their business plans. The combined company’s success after the completion of the merger will depend in part upon the ability of each of Lantheus Holdings and Progenics to attract, motivate and retain key management personnel and other key employees. Prior to completion of the merger, current and prospective employees of each of Lantheus Holdings and Progenics may experience uncertainty about their roles within the combined company following the completion of the merger,

which may have an adverse effect on the ability of each of Lantheus Holdings and Progenics to attract, motivate or retain management personnel and other key employees. In addition, no assurance can be given that the combined company will be able to attract, motivate or retain management personnel and other key employees of each of Lantheus Holdings and Progenics to the same extent that Lantheus Holdings and Progenics have previously been able to attract or retain their own employees.

Progenics' executive officers and directors have interests in the merger that may be different from your interests as a stockholder of Progenics.

When considering the recommendation of the Progenics Board that Progenics stockholders vote in favor of the merger agreement proposal, the Progenics adjournment proposal and the compensation advisory proposal, Progenics stockholders should be aware that Progenics' directors and executive officers have interests in the merger that may be different from, or in addition to, the interests of Progenics stockholders generally, including accelerated vesting of their Progenics stock options in connection with the merger (or, in the case of executive officers, a qualifying termination of employment on or following the merger), certain retention payments that may be made to Progenics' executive officers (other than Mr. Baker) in connection with the closing of the merger, and rights to ongoing indemnification and insurance coverage in accordance with the terms of certain indemnification agreements. See "Interests of Progenics' Directors and Executive Officers in the Merger" beginning on page 180 of this joint proxy statement/prospectus for a more detailed description of these interests. Further, one such member of the Progenics Board will be appointed to the Lantheus Holdings Board as of immediately after the completion of the merger. The Progenics Board and the Lantheus Holdings Board were aware of these interests and considered them, in addition to other matters, in evaluating, negotiating and approving the merger agreement and in recommending that Progenics stockholders adopt the merger agreement and that the Lantheus Holdings stockholders approve the stock issuance, respectively.

The merger agreement limits the ability of both Lantheus Holdings and Progenics to pursue alternatives to the merger and may discourage other companies from trying to acquire either Lantheus Holdings or Progenics.

The merger agreement contains a no solicitation covenant that restricts both Lantheus Holdings' and Progenics' ability to (i) initiate or solicit or knowingly facilitate, knowingly induce or knowingly encourage any inquiry or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, a takeover proposal (as defined in "The Merger Agreement—No Solicitation," beginning on page 163 of this joint proxy statement/prospectus), (ii) enter into, continue or otherwise participate in any discussions or negotiations regarding, furnish to any person any information or data with respect to, or cooperate in any way that would otherwise reasonably be expected to lead to, any proposal or offer that constitutes, or would reasonably be expected to lead to, any takeover proposal, (iii) submit to the stockholders of Progenics or Lantheus Holdings, as applicable, for their approval or adoption any takeover proposal, or (iv) agree or publicly announce an intention to take any of the foregoing actions. In the event either company receives a *bona fide* written takeover proposal, it must promptly communicate the receipt of such proposal and provide copies of all written materials provided, including the terms and conditions of such proposal, to the other party. If, in response to such proposals and subject to certain conditions, either company intends to effect a change in recommendation of its board of directors (as defined in "The Merger Agreement—No Solicitation," beginning on page 163 of this joint proxy statement/prospectus), it must engage in good faith negotiations with the other party to amend the merger agreement in response to such competing takeover proposal before its board may make a change in recommendation. The merger agreement further provides that in the event of a termination of the merger agreement under certain specified circumstances, including a termination following a change in recommendation by the board of directors of either party or a willful breach of the no solicitation provision applicable to it, such party may be required to pay the other party a termination fee equal to \$18,340,000 (see "The Merger Agreement—Termination Fees and Expenses" beginning on page 176 of this joint proxy statement/prospectus).

These provisions could discourage a potential third-party acquirer that might have an interest in acquiring all or a significant portion of Lantheus Holdings or Progenics from considering or proposing that acquisition, even if that

party were prepared to pay consideration with a higher per-share value than the currently proposed merger consideration, in the case of Progenics, or that party were prepared to enter into an agreement that may be favorable to Lantheus Holdings or its stockholders, in the case of Lantheus Holdings. These provisions might also result in a potential third-party acquirer proposing to pay a lower price in a takeover proposal than it might otherwise have proposed to pay because of the added expense of the termination fee and other fees and expenses that may become payable in certain circumstances.

The shares of Lantheus Holdings common stock to be received by Progenics stockholders upon completion of the merger will have different rights from shares of Progenics common stock.

Upon completion of the merger, Progenics stockholders will no longer be stockholders of Progenics, but will instead become stockholders of Lantheus Holdings, and their rights as Lantheus Holdings stockholders will be governed by the terms of Lantheus Holdings' amended and restated certificate of incorporation, as it may be amended from time to time, which is referred to in this joint proxy statement/prospectus as Lantheus Holdings' certificate of incorporation, and Lantheus Holdings' amended and restated bylaws, as they may be amended from time to time, which are referred to in this joint proxy statement/prospectus as Lantheus Holdings' bylaws. The terms of Lantheus Holdings' certificate of incorporation and Lantheus Holdings' bylaws are in some respects materially different than the terms of Progenics' amended and restated certificate of incorporation, as they may be amended from time to time, which is referred to in this joint proxy statement/prospectus as Progenics' certificate of incorporation, and Progenics' by-laws, as they may be amended from time to time, which are referred to in this joint proxy statement/prospectus as Progenics' by-laws, which currently govern the rights of Progenics stockholders. See "Comparison of Stockholder Rights" beginning on page 197 of this joint proxy statement/prospectus for a discussion of the different rights associated with shares of Progenics common stock and shares of Lantheus Holdings common stock.

Lantheus Holdings and Progenics may be targets of securities class action and derivative lawsuits that could result in substantial costs and may delay or prevent the merger from being completed.

Securities class action lawsuits and derivative lawsuits are often brought against public companies that have entered into merger agreements. Even if the lawsuits are without merit, defending against these claims can result in substantial costs and divert management time and resources. An adverse judgment could result in monetary damages, which could have a negative impact on Lantheus Holdings' and Progenics' respective liquidity and financial condition. Additionally, if a plaintiff is successful in obtaining an injunction prohibiting completion of the merger, then that injunction may delay or prevent the merger from being completed, or from being completed within the expected timeframe, which may adversely affect the business, financial position and results of operation of Lantheus Holdings and Progenics. As of the date of filing of this report, neither Lantheus Holdings nor Progenics is aware of any securities class action lawsuits or derivative lawsuits having been filed in connection with the merger. Progenics has received shareholder demands under Section 220 of the DGCL to inspect its books and records concerning the negotiation and execution of the merger agreement, however, alleging that the Progenics Board may have breached its fiduciary obligations. See "—Background of the Merger and Certain Other Developments" beginning on page 82 of this joint proxy statement/prospectus.

Lantheus Holdings and Progenics are each subject to business uncertainties and contractual restrictions while the merger is pending, which could adversely affect the business and operations of Lantheus Holdings, Progenics or the combined company.

In connection with the pendency of the merger, it is possible that some customers, suppliers and other persons with whom Lantheus Holdings or Progenics has a business relationship may delay or defer certain business decisions or might decide to seek to terminate, change or renegotiate their relationships with Lantheus Holdings or Progenics, as the case may be, as a result of the merger, which could negatively affect Lantheus Holdings' or Progenics' current, or the combined company's future, revenues, earnings and cash flows, as well as the market price of Lantheus Holdings or Progenics common stock, regardless of whether the merger is completed. Under

the terms of the merger agreement, Lantheus Holdings and Progenics are each subject to certain restrictions on the conduct of its business prior to completing the merger, which could adversely affect each party's ability to execute certain of its business strategies. Such limitations could adversely affect each party's business and operations prior to the completion of the merger. Each of the risks described above may be exacerbated by delays or other adverse developments with respect to the completion of the merger.

The unaudited pro forma combined financial information and prospective financial information included in this joint proxy statement/prospectus are presented for illustrative purposes only and do not represent the actual financial position or results of operations of the combined company following completion of the merger.

The unaudited pro forma combined financial information and prospective financial information contained in this joint proxy statement/prospectus is presented for illustrative purposes only, contains a variety of adjustments, assumptions and preliminary estimates and does not represent the actual financial position or results of operations of Lantheus Holdings and Progenics prior to the merger or that of the combined company following the merger for several reasons. Among other things, the unaudited pro forma combined financial information does not reflect the projected realization of cost savings following completion of the merger. See the sections entitled "Certain Unaudited Pro Forma Condensed Combined Financial Statements," "Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Certain Unaudited Prospective Financial Information" and "Comparative Historical and Unaudited Pro Forma Combined Per Share Data" beginning on pages 50, 138 and 48, respectively, of this joint proxy statement/prospectus.

The actual financial positions and results of operations of Lantheus Holdings and Progenics prior to the merger and that of the combined company following the merger may not be consistent with, or evident from, and may differ materially and adversely from, the unaudited pro forma combined financial information or prospective financial information included in this joint proxy statement/prospectus. In addition, the assumptions used in preparing the unaudited pro forma combined financial information and/or the prospective financial information included in this joint proxy statement/prospectus may not be realized, may not prove to be accurate and may be affected by other factors, which could lead to material changes to the combined company's business that are not reflected in the unaudited pro forma combined financial information.

The opinions of Progenics' and Lantheus Holdings' respective financial advisors do not reflect changes in circumstances that may have occurred or that may occur between the signing of the merger agreement and the completion of the merger.

Neither the Progenics Board nor the Lantheus Holdings Board has obtained updated opinions from their respective financial advisors as of the date of this joint proxy statement/prospectus, nor do either of them expect to receive updated, revised or reaffirmed opinions prior to the completion of the merger. Changes in the operations and prospects of Progenics or Lantheus Holdings, general market and economic conditions and other factors that may be beyond the control of Progenics or Lantheus Holdings, and on which Progenics' and Lantheus Holdings' financial advisors' opinions were based, may significantly alter the value of Progenics or Lantheus Holdings or the share prices of Progenics common stock or Lantheus Holdings common stock by the time the merger is completed. The opinions do not speak as of the time the merger will be completed or as of any date other than the date of such opinions. Because Progenics' and Lantheus Holdings' financial advisors will not be updating their opinions, the opinions will not address the fairness of the merger consideration from a financial point of view at the time the merger is completed. The Lantheus Holdings Board's recommendation that Lantheus Holdings stockholders approve the stock issuance proposal and the Progenics Board's recommendation that Progenics stockholders approve the merger agreement proposal, however, are made as of the date of this joint proxy statement/prospectus. For a description of the opinions that the Progenics Board and the Lantheus Holdings Board received from their respective financial advisors, see "Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Opinion of Lantheus

Holdings' Financial Advisor" and "Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Opinion of Progenics' Financial Advisor" beginning on pages 120 and 129, respectively, of this joint proxy statement/prospectus.

The merger may not occur, and if it does, it may not be accretive and may cause dilution to Lantheus Holdings earnings per share, which may negatively affect the market price of its common stock.

Although it is currently anticipated that the merger will occur and will be accretive to Lantheus Holdings' adjusted earnings per share by 2022 and GAAP-reported earnings per share by 2023, these expectations are based on assumptions about Lantheus Holdings' and Progenics' business and preliminary estimates, which may change materially. Certain other expenses to be paid in connection with the merger may cause dilution to Lantheus Holdings' earnings per share or decrease or delay the expected accretive effect of the merger and could cause a decrease in the market price of the Lantheus Holdings common stock. In addition, the merger may not occur or Lantheus Holdings could encounter additional transaction-related costs or other factors such as the failure to realize all of the benefits anticipated in the merger, including synergies, cost savings, innovation and operational efficiencies and revenue growth from the combination. All of these factors could cause dilution to Lantheus Holdings' earnings per share or decrease or delay the expected accretive effect of the merger and cause a decrease in the market price of Lantheus Holdings common stock.

There can be no assurances that Progenics shareholders will not be required to recognize gain for U.S. federal income tax purposes upon the exchange of Progenics common stock for shares of Lantheus Holdings common stock in the merger.

Although Lantheus Holdings and Progenics have agreed not to, and agreed not to permit any subsidiary to, take any action that would prevent the merger from constituting a tax-deferred "reorganization" within the meaning of Section 368(a) of the Code, there can be no assurance that the merger will so qualify. It is a condition to the respective obligations of each of Lantheus Holdings and Progenics to complete the merger that it receives a legal opinion to that effect. Even if such opinions are rendered, however, there can be no assurance that the Internal Revenue Service, which is referred to in this joint proxy statement/prospectus as the IRS, will agree with the conclusions expressed therein or that a court would sustain such conclusions. The merger is not conditioned on the receipt of an IRS ruling to that effect. Whether or not the merger will qualify for the intended tax treatment depends on facts that will not be known until the merger is completed.

If the IRS or a court determines that the merger does not qualify as a "reorganization" within the meaning of Section 368(a) of the Code, a U.S. holder (as defined in "Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Material U.S. Federal Income Tax Consequences") of Progenics common stock generally would recognize taxable gain or loss upon the exchange of Progenics common stock for Lantheus Holdings common stock pursuant to the merger. You should read the section "Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Material U.S. Federal Income Tax Consequences" beginning on page 147 of this joint proxy statement/prospectus and consult your own tax advisors regarding the U.S. federal income tax consequences of the transaction to you in your particular circumstances.

Risks Related to the Combined Company After Completion of the Merger

The combined company may be unable to successfully integrate the Progenics business into the Lantheus Holdings business and realize the anticipated benefits of the merger.

The success of the merger will depend, in part, on the combined company's ability to successfully combine the business of Progenics with the business of Lantheus Holdings, which currently operate as independent public companies, and realize the anticipated benefits, including synergies, cost savings, innovation and operational efficiencies and revenue growth from the combination. If the combined company is unable to achieve these

objectives within the anticipated time frame, or at all, the anticipated benefits may not be realized fully or at all, or may take longer to realize than expected and the value of the combined company's common stock may be harmed. The merger involves the integration of Progenics' business into Lantheus Holdings' existing business, which is expected to be a complex, costly and time-consuming process. Lantheus Holdings and Progenics have not previously completed a transaction comparable in size or scope to the merger. The integration may result in material challenges, including, without limitation:

- The diversion of management's attention from ongoing business concerns and performance shortfalls at one or both of the companies as a result of the devotion of management's attention to the merger;
- Managing a larger combined company;
- Maintaining employee morale and attracting, motivating and retaining management personnel and other key employees;
- The possibility of faulty assumptions underlying expectations regarding the integration process;
- Retaining existing business and operational relationships and attracting new business and operational relationships;
- Integrating corporate and administrative infrastructures in geographically separate organizations and eliminating duplicative expenses;
- Unanticipated issues in integrating information technology, communications and other systems;
- Unanticipated changes in federal or state laws or regulations; and
- Unforeseen expenses or delays associated with the merger.

Many of these factors will be outside of the combined company's control and any one of them could result in delays, increased costs, decreases in the amount of expected revenues and diversion of management's time and energy, which could materially affect the combined company's financial position, results of operations and cash flows. Lantheus Holdings and Progenics have operated, and until completion of the merger will continue to operate, independently. Lantheus Holdings and Progenics are currently permitted to conduct only limited planning for the integration of the two companies following the merger and have not yet determined the exact nature of how the businesses and operations of the two companies will be combined after the combination. The actual integration of Progenics with Lantheus Holdings' business may result in additional or unforeseen expenses, and the anticipated benefits of the integration plan may not be realized. These integration matters could have an adverse effect on (i) each of Lantheus Holdings and Progenics during this transition period and (ii) the combined company for an undetermined period after completion of the merger. In addition, any actual cost savings of the merger could be less than anticipated.

Completion of the merger may trigger change in control or other provisions in certain agreements to which Progenics or its subsidiaries are a party, which may have an adverse impact on the combined company's business and results of operations.

The completion of the merger may trigger change in control and other provisions in certain agreements to which Progenics or its subsidiaries are a party. If Lantheus Holdings and Progenics are unable to negotiate waivers of those provisions, the counterparties may exercise their rights and remedies under the agreements, potentially terminating the agreements or seeking monetary damages. Even if Lantheus Holdings and Progenics are able to negotiate waivers, the counterparties may require a fee for such waivers or seek to renegotiate the agreements on terms less favorable to Progenics or the combined company. Any of the foregoing or similar developments may have an adverse impact on the combined company's business and results of operations.

The financial analyses and forecasts considered by Lantheus Holdings and Progenics and their respective financial advisors may not be realized, which may adversely affect the market price of Lantheus Holdings common stock following the completion of the merger.

In performing their financial analyses and rendering their opinions related to the merger, each of the respective financial advisors to Lantheus Holdings and Progenics relied on, among other things, internal stand-alone financial analyses and forecasts as separately provided by Lantheus Holdings and Progenics. See “Opinion of Lantheus Holdings’ Financial Advisor” and “Opinion of Progenics’ Financial Advisor” beginning on pages 120 and 129, respectively. These analyses and forecasts were prepared by, or as directed by, the management of Lantheus Holdings or the management of Progenics, as applicable. None of these analyses or forecasts were prepared with a view towards public disclosure or compliance with the published guidelines of the SEC, the U.S. Generally Accepted Accounting Principles, which is referred to in this joint proxy statement/prospectus as GAAP, or the guidelines established by the American Institute of Certified Public Accountants for preparation and presentation of financial forecasts. These projections are inherently based on various estimates and assumptions that are subject to the judgment of those preparing them. These projections are also subject to significant economic, competitive, industry and other uncertainties and contingencies, all of which are difficult or impossible to predict and many of which are beyond the control of Lantheus Holdings and Progenics. There can be no assurance that Lantheus Holdings’ or Progenics’ financial condition or results of operations will be consistent with those set forth in such analyses and forecasts, which could have an adverse impact on the market price of Lantheus Holdings common stock or the financial position of the combined company following the merger.

The combined company is expected to incur substantial expenses related to the completion of the merger and the integration of the Progenics business with Lantheus Holdings’ business.

The combined company is expected to incur substantial expenses in connection with the completion of the merger and the integration of the Progenics business with Lantheus Holdings’ business. There are a large number of processes, policies, procedures, operations, technologies and systems that must be integrated, including purchasing, accounting and finance, sales, payroll, pricing, revenue management, marketing and benefits. The substantial majority of these costs will be non-recurring expenses related to the merger, facilities and systems consolidation costs. The combined company may incur additional costs to maintain employee morale and to attract, motivate or retain management personnel or key employees. The combined company will also incur transaction fees and costs related to formulating integration plans for the combined business, and the execution of these plans may lead to additional unanticipated costs. These incremental transaction and acquisition-related costs may exceed the savings the combined company expects to achieve from the elimination of duplicative costs and the realization of other efficiencies related to the integration of the businesses, particularly in the near term and in the event there are material unanticipated costs.

Current Lantheus Holdings stockholders and Progenics stockholders will have a reduced ownership and voting interest after the merger and will exercise less voting power and less influence over the management of the combined company.

Upon completion of the merger, Lantheus Holdings expects to issue approximately 21,722,636 shares of Lantheus Holdings common stock to Progenics stockholders in connection with the transactions contemplated by the merger agreement. As a result, Lantheus Holdings and Progenics estimate that, immediately after the completion of the merger, Lantheus Holdings stockholders will own approximately 65% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding) and former Progenics stockholders will own approximately 35% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding). In addition, shares of Lantheus Holdings common stock may be issued from time to time following the effective time of the merger to holders of Progenics stock options on the terms set forth in the merger agreement. See “The Merger Agreement—Treatment of Progenics Stock Options” beginning on page 153 of this joint proxy statement/prospectus for a more detailed explanation.

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Consequently, current Lantheus Holdings stockholders in the aggregate will have less voting power and less influence over the management and policies of Lantheus Holdings than they currently have over the management and policies of Lantheus Holdings, and current Progenics stockholders in the aggregate will have significantly less voting power and less influence over the management and policies of Lantheus Holdings than they currently have over the management and policies of Progenics.

Risks Related to Lantheus Holdings and Progenics

Lantheus Holdings and Progenics are, and following completion of the merger Lantheus Holdings will continue to be, subject to the risks described in Part I, Item 1A in Lantheus Holdings' Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 20, 2019, and Part I, Item 1A in Progenics' Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on March 15, 2019, as amended on April 30, 2019, and as updated by their respective Quarterly Reports on Form 10-Q and future filings with the SEC, in each case, incorporated by reference into this joint proxy statement/prospectus. See "Where You Can Find More Information" beginning on page 222 of this joint proxy statement/prospectus.

SELECTED HISTORICAL CONSOLIDATED FINANCIAL DATA OF LANTHEUS HOLDINGS

The following tables present selected historical consolidated financial data of Lantheus Holdings. The selected historical consolidated financial data of Lantheus Holdings for the fiscal years ended December 31, 2018, 2017 and 2016 and as of December 31, 2018 and 2017 are derived from Lantheus Holdings' audited consolidated financial statements and related notes contained in its Annual Report on Form 10-K for the fiscal year ended December 31, 2018, which is incorporated by reference into this joint proxy statement/prospectus. The selected historical consolidated financial data of Lantheus Holdings for the fiscal years ended December 31, 2015 and 2014, and as of December 31, 2016, 2015 and 2014, have been derived from Lantheus Holdings' audited consolidated financial statements for such years, which have not been incorporated by reference into this joint proxy statement/prospectus.

The selected historical consolidated financial data of Lantheus Holdings for the nine months ended September 30, 2019 and 2018 and as of September 30, 2019 are derived from Lantheus Holdings' unaudited condensed consolidated financial statements and related notes contained in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019, which is incorporated by reference into this joint proxy statement/prospectus. The selected historical consolidated financial data of Lantheus Holdings as of September 30, 2018 are derived from Lantheus Holdings' unaudited condensed consolidated financial statements and related notes contained in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2018, which has not been incorporated by reference into this joint proxy statement/prospectus. Lantheus Holdings' unaudited condensed consolidated financial statements have been prepared on a basis consistent with its audited financial statements and include all normal and recurring adjustments necessary for a fair presentation of the results for each interim period.

The following selected historical consolidated financial data of Lantheus Holdings set forth below is only a summary and is not necessarily indicative of future results. You should read the following information in conjunction with Lantheus Holdings' audited consolidated financial statements contained in its Annual Report on Form 10-K for the year ended December 31, 2018 and unaudited condensed consolidated financial statements contained in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019, including "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the notes to Lantheus Holdings' consolidated financial statements for significant events affecting the comparability of results as well as material uncertainties regarding Lantheus Holdings' future financial condition and results of operations in its entirety. See the section entitled "Where You Can Find More Information" beginning on page 222 of this joint proxy statement/prospectus.

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	Nine Months Ended September 30,		Years Ended December 31,				
	2019	2018	2018	2017	2016	2015	2014
	(in thousands, except per share data)						
Statements of Operations							
Revenues	\$ 257,991	\$ 257,103	\$ 343,374	\$ 331,378	\$ 301,853	\$ 293,461	\$ 301,600
Cost of goods sold	127,745	126,063	168,489	169,243	164,073	157,939	176,081
Sales and marketing	31,496	33,248	43,159	42,315	36,542	34,740	35,116
General and administrative	43,943	37,727	50,167	49,842	38,832	43,894	37,313
Research and development	15,584	12,520	17,071	18,125	12,203	14,358	13,673
Gain on sales of assets	—	—	—	—	6,385	—	—
Operating income	39,223	47,545	64,488	51,853	56,588	42,530	39,417
Interest expense	11,491	12,794	17,405	18,410	26,618	38,715	42,288
Debt retirement costs	—	—	—	—	1,896	—	—
Loss on extinguishment of debt	3,196	—	—	2,442	—	15,528	—
Other (income) expense	(1,695)	(2,055)	(2,465)	(8,638)	(220)	65	(505)
Income (loss) before income taxes	26,231	36,806	49,548	39,639	28,294	(11,778)	(2,366)
Income tax expense (benefit) ^(a)	5,014	9,581	9,030	(83,746)	1,532	2,968	1,195
Net income (loss)	\$ 21,217	\$ 27,225	\$ 40,518	\$ 123,385	\$ 26,762	\$ (14,746)	\$ (3,561)
Net income (loss) per common share:							
Basic	\$ 0.55	\$ 0.71	\$ 1.06	\$ 3.31	\$ 0.84	\$ (0.60)	\$ (0.20)
Diluted	\$ 0.53	\$ 0.69	\$ 1.03	\$ 3.17	\$ 0.82	\$ (0.60)	\$ (0.20)
Weighted-average common shares:							
Basic	38,901	38,155	38,233	37,276	32,044	24,440	18,081
Diluted	40,123	39,467	39,501	38,892	32,656	24,440	18,081

(a) The 2017 amount reflects the release of Lantheus Holdings' valuation allowance of \$141.1 million against its deferred tax assets offset by a provision of \$45.1 million for remeasuring the Company's deferred tax assets for the change in tax rates enacted under the Tax Cuts and Jobs Act of 2017.

	September 30,		December 31,				
	2019	2018	2018	2017	2016	2015	2014
	(in thousands)						
Balance Sheet Data							
Cash and cash equivalents	\$ 78,062	\$104,584	\$113,401	\$ 76,290	\$ 51,178	\$ 28,596	\$ 19,739
Total assets	402,409	424,818	439,831	383,858	255,898	242,379	243,153
Long-term debt, net	196,539	266,880	263,709	265,393	274,460	349,858	392,863
Total liabilities	301,243	369,310	368,829	360,567	362,414	427,668	482,423
Total stockholders' equity (deficit)	101,166	55,508	71,002	23,291	(106,516)	(185,289)	(239,270)

SELECTED HISTORICAL CONSOLIDATED FINANCIAL DATA OF PROGENICS

The following tables present selected historical consolidated financial data of Progenics. The selected historical consolidated financial data of Progenics for the fiscal years ended December 31, 2018, 2017 and 2016 and as of December 31, 2018 and 2017 are derived from Progenics' audited consolidated financial statements and related notes contained in its Annual Report on Form 10-K for the year ended December 31, 2018, which is incorporated by reference into this joint proxy statement/prospectus. The selected historical consolidated financial data of Progenics for the fiscal years ended December 31, 2015 and 2014 and as of December 31, 2016, 2015 and 2014 are derived from Progenics' audited consolidated financial statements for such years, which have not been incorporated by reference into this joint proxy statement/prospectus.

The selected historical consolidated financial data of Progenics for the nine months ended September 30, 2019 and 2018 and as of September 30, 2019 are derived from Progenics' unaudited condensed consolidated financial statements and related notes contained in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019, which is incorporated by reference into this joint proxy statement/prospectus. The selected historical consolidated financial data of Progenics as of September 30, 2018 are derived from Progenics' unaudited condensed consolidated financial statements and related notes contained in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2018, which has not been incorporated by reference into this joint proxy statement/prospectus. Progenics' unaudited condensed consolidated financial statements have been prepared on a basis consistent with its audited financial statements and include all normal and recurring adjustments necessary for a fair presentation of the results for each interim period.

The following selected historical consolidated financial data of Progenics set forth below is only a summary and is not necessarily indicative of future results. You should read the following information in conjunction with Progenics' audited consolidated financial statements contained in its Annual Report on Form 10-K for the year ended December 31, 2018 and unaudited condensed consolidated financial statements contained in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019, including "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the notes to Progenics' consolidated financial statements for significant events affecting the comparability of results as well as material uncertainties regarding Progenics' future financial condition and results of operations. See the section entitled "Where You Can Find More Information" beginning on page 222 of this joint proxy statement/prospectus.

	Nine Months Ended September 30,		Years Ended December 31,				
	2019	2018	2018	2017	2016	2015	2014
(in thousands, except per share data)							
Consolidated Statements of Operations Data(a):							
Revenue:							
Product sales	\$ 840	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Royalty income	12,666	11,757	14,908	10,965	10,295	6,608	3,101
Other revenue	6,354	627	714	733	59,134	2,068	41,276
Total revenue	19,860	12,384	15,622	11,698	69,429	8,676	44,377
Expenses:							
Cost of goods sold	1,810	—	—	—	—	—	—
Research and development	36,911	25,547	35,147	42,589	37,569	28,196	28,592
Selling, general and administrative	35,267	21,341	29,431	24,909	23,356	18,184	15,489
Intangible impairment charges	—	23,200	23,200	—	—	—	2,676
Change in contingent consideration liability	1,316	(5,900)	(5,800)	2,600	(4,600)	1,600	1,500
Total operating expenses	75,304	64,188	81,978	70,098	56,325	47,980	48,257
Other operating income	—	—	—	—	—	—	7,250
Operating (loss) income	(55,444)	(51,804)	(66,356)	(58,400)	13,104	(39,304)	3,370
Other expense (income):							
Interest (expense) income and other income, net	(1,833)	(2,698)	(2,933)	(4,285)	(527)	52	51
Total other (expense) income	(1,833)	(2,698)	(2,933)	(4,285)	(527)	52	51
(Loss) income before income tax benefit (expense)	(57,277)	(54,502)	(69,289)	(62,685)	12,577	(39,252)	3,421
Income tax benefit (expense)	—	1,549	1,632	11,672	(1,844)	133	989
Net (loss) income	(57,277)	(52,953)	(67,657)	(51,013)	10,733	(39,119)	4,410
Net loss attributable to noncontrolling interests	—	—	—	—	(73)	(7)	—
Net (loss) income attributable to Progenics	<u>\$(57,277)</u>	<u>\$(52,953)</u>	<u>\$(67,657)</u>	<u>\$(51,013)</u>	<u>\$10,806</u>	<u>\$(39,112)</u>	<u>\$ 4,410</u>
Per share amount on net (loss) income attributable to Progenics:							
Basic	<u>\$ (0.67)</u>	<u>\$ (0.70)</u>	<u>\$ (0.87)</u>	<u>\$ (0.73)</u>	<u>\$ 0.15</u>	<u>\$ (0.56)</u>	<u>\$ 0.06</u>
Diluted	<u>\$ (0.67)</u>	<u>\$ (0.70)</u>	<u>\$ (0.87)</u>	<u>\$ (0.73)</u>	<u>\$ 0.15</u>	<u>\$ (0.56)</u>	<u>\$ 0.06</u>

	September 30,		December 31,				
	2019	2018	2018	2017	2016	2015	2014
(in thousands)							
Consolidated Balance Sheets Data(a):							
Cash and cash equivalents	\$ 64,493	\$ 148,851	\$ 137,686	\$ 90,642	\$ 138,909	\$ 74,103	\$ 119,302
Working capital	55,659	140,414	120,683	81,511	131,744	73,556	115,241
Total assets	130,052	182,382	169,497	145,957	198,986	131,251	161,037
Other liabilities—long term	53,971	51,004	44,976	67,145	77,867	30,861	29,443
Total stockholders' equity	55,937	114,883	101,075	63,453	104,762	90,661	124,909

(a) The selected consolidated statement of operations data for the nine months ended September 30, 2019 and the selected consolidated balance sheet data as of September 30, 2019 reflect the modified retrospective adoption of ASU 2016-02, "Leases (Topic 842)."

**COMPARATIVE HISTORICAL AND UNAUDITED
PRO FORMA COMBINED PER SHARE DATA**

The following table sets forth selected historical and unaudited pro forma combined per share information for Lantheus Holdings and Progenics.

Historical Per Share of Common Stock Information of Lantheus Holdings and Progenics. The historical per share of common stock information of each of Lantheus Holdings and Progenics below is derived from the audited consolidated financial statements of each of Lantheus Holdings and Progenics as of and for the year ended December 31, 2018 and the unaudited condensed consolidated financial statements of each of Lantheus Holdings and Progenics as of and for the nine months ended September 30, 2019.

Unaudited Pro Forma Combined Per Lantheus Holdings Share of Common Stock Data. The Lantheus Holdings unaudited pro forma combined per share of common stock data set forth below gives effect to the merger under the acquisition method of accounting as if the merger had been effective on January 1, 2018, the first day of Lantheus Holdings' fiscal year ended December 31, 2018. The unaudited pro forma combined book value per share of Lantheus Holdings common stock data set forth below gives effect to the merger under the acquisition method of accounting as if the merger had been effective September 30, 2019, assuming that each outstanding share of Progenics common stock had been converted into shares of Lantheus Holdings common stock based on the exchange ratio of 0.2502.

The acquisition method of accounting is based on ASC 805, and uses the fair value concepts defined in ASC 820, Fair Value Measurements ("ASC 820"). Acquisition accounting requires, among other things, that certain assets acquired and liabilities assumed be recognized at their fair values as of the acquisition date. The pro forma adjustments reflect Lantheus Holdings' provisional estimates of fair value for certain assets and liabilities of Progenics. Differences between these preliminary estimates and the final fair values determined as part of acquisition accounting upon closing of the transaction will occur, and these differences could have a material impact on the unaudited pro forma combined per share information set forth in the following table.

The unaudited pro forma combined per share of Lantheus Holdings common stock data is presented for illustrative purposes only and does not purport to represent the actual financial position or results of operations that Lantheus Holdings would have achieved had the companies been combined during these periods or to project the future financial position or results of operations that Lantheus Holdings may achieve after completion of the merger.

Unaudited Pro Forma Combined Per Progenics Equivalent Share Data. The Progenics unaudited pro forma combined per Progenics equivalent share data set forth below shows the effect of the merger from the perspective of an owner of shares of Progenics common stock. The information was calculated by multiplying the unaudited pro forma combined per share of Lantheus Holdings common stock amounts by the exchange ratio of 0.2502.

General Information. You should read the below information in conjunction with the selected historical consolidated financial data included elsewhere in this joint proxy statement/prospectus and the historical consolidated financial statements of Lantheus Holdings and Progenics and related notes that have been filed with the SEC, certain of which are incorporated by reference into this joint proxy statement/prospectus. See "Selected Historical Consolidated Financial Data of Lantheus Holdings," "Selected Historical Consolidated Financial Data of Progenics" and "Where You Can Find More Information" beginning on pages 44, 46 and 222, respectively, of this joint proxy statement/prospectus. The unaudited pro forma combined per share of Lantheus Holdings common stock data and the unaudited pro forma combined per Progenics equivalent share data is derived from, and should be read in conjunction with, the Lantheus Holdings and Progenics unaudited pro forma condensed combined financial statements and related notes included in this joint proxy statement/prospectus. See "Certain

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Unaudited Pro Forma Condensed Combined Financial Statements” beginning on page 50 of this joint proxy statement/prospectus.

	As of and For the Nine Months Ended September 30, 2019	As of and For the Year Ended December 31, 2018
Lantheus Holdings Historical per Common Share Data:		
Net income—basic	\$ 0.55	\$ 1.06
Net income—diluted	0.53	1.03
Book value ⁽¹⁾	2.58	1.85
Progenics Historical per Common Share Data:		
Net loss—basic and diluted	\$ (0.67)	\$ (0.87)
Book value ⁽¹⁾	0.65	1.20
Unaudited Pro Forma Combined per Lantheus Holdings Common Share Data:		
Net loss—basic and diluted	\$ (0.34)	\$ (0.22)
Book value ⁽¹⁾	8.92	N/A
Unaudited Pro Forma Combined per Progenics Equivalent Share Data:		
Net loss—basic and diluted ⁽²⁾	\$ (0.09)	\$ (0.06)
Book value ⁽²⁾	2.23	N/A

- (1) Amounts calculated by dividing the applicable total stockholders' equity by the applicable shares of common stock outstanding. Pro forma combined book value per share as of December 31, 2018 is not applicable as the estimated pro forma balance sheet adjustments were calculated as of September 30, 2019.
- (2) Amounts calculated by multiplying unaudited pro forma combined per share amounts by the exchange ratio of 0.2502. This information shows how each share of Progenics common stock would have participated in the combined company's net loss and book value if the pro forma impacts of the transaction had occurred on the relevant dates.

**CERTAIN UNAUDITED PRO FORMA CONDENSED
COMBINED FINANCIAL STATEMENTS**

The following unaudited pro forma condensed combined financial statements are presented to illustrate the estimated effects of the merger.

The unaudited pro forma condensed combined statements of operations for the year ended December 31, 2018 and for the nine months ended September 30, 2019 combine the historical consolidated statements of operations of Lantheus Holdings and Progenics, giving effect to the merger as if it occurred on January 1, 2018. The unaudited pro forma condensed combined balance sheet as of September 30, 2019 combines the historical consolidated balance sheets of Lantheus Holdings and Progenics, giving effect to the merger as if the merger had occurred on September 30, 2019. The historical consolidated financial statements have been adjusted in the unaudited pro forma condensed combined financial statements to give effect to pro forma adjustments that are (1) directly attributable to the merger, (2) factually supportable and (3) with respect to the unaudited pro forma condensed combined statements of operations, expected to have a continuing impact on the combined results.

The unaudited pro forma condensed combined financial statements should be read in conjunction with the accompanying notes to the unaudited pro forma condensed combined financial statements. In addition, the unaudited pro forma condensed combined financial statements have been derived from and should be read in conjunction with the following historical consolidated financial statements and notes incorporated by reference into this joint proxy statement/prospectus: (a) the audited consolidated financial statements of Lantheus Holdings contained in its Annual Report on Form 10-K for the year ended December 31, 2018; (b) the audited consolidated financial statements of Progenics contained in its Annual Report on Form 10-K for the year ended December 31, 2018; (c) the unaudited condensed consolidated financial statements of Lantheus Holdings contained in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019; and (d) the unaudited condensed consolidated financial statements of Progenics contained in its Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019. Refer to the section of this joint proxy statement/prospectus titled “Where You Can Find More Information” for instructions on how to obtain these documents.

The unaudited pro forma condensed combined financial statements have been prepared by management in accordance with Article 11, Pro Forma Financial Information, under Regulation S-X of the Exchange Act, and are for illustrative and informational purposes only. The unaudited pro forma condensed combined financial statements are not necessarily indicative of what the combined company’s financial position or results of operations actually would have been had the merger been completed as of the dates indicated. In addition, the unaudited pro forma condensed combined financial statements do not purport to project the future financial position or operating results of the combined company. There were no material transactions between Lantheus Holdings and Progenics during the periods presented in the unaudited pro forma condensed combined financial statements that would need to be eliminated.

The unaudited pro forma condensed combined financial statements have been prepared using the acquisition method of accounting under ASC 805, with Lantheus Holdings being the accounting acquirer in the proposed merger with Progenics. As of the date of this joint proxy statement/prospectus, Lantheus Holdings has not completed the detailed valuation studies necessary to arrive at the final estimates of the fair market value of certain Progenics assets to be acquired and liabilities to be assumed and the related allocations of purchase price, nor has it identified any adjustments necessary to conform Progenics to Lantheus Holdings’ accounting policies, except for the ones described in the accompanying notes. The acquisition method of accounting is dependent upon certain valuations that are provisional in nature and subject to change. Accordingly, the pro forma adjustments in the unaudited pro forma condensed combined financial statements are preliminary, based upon available information and made solely for the purpose of preparing these unaudited pro forma condensed combined financial statements. Actual results will differ from the unaudited pro forma condensed combined financial statements once the final acquisition accounting by Lantheus Holdings has been completed, Lantheus Holdings has determined the final purchase price for Progenics, the valuation studies necessary to finalize the

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required purchase price allocations have been completed and if Lantheus Holdings identifies any additional conforming accounting policy changes outside of the ones provided in the accompanying notes. There can be no assurance that such finalization will not result in material changes.

The unaudited pro forma condensed combined financial statements do not reflect any expected cost savings, operating synergies or revenue enhancements that the combined company may achieve as a result of the merger, any termination, restructuring or other costs to integrate the operations of Lantheus Holdings and Progenics or the costs necessary to achieve any such cost savings, operating synergies or revenue enhancements.

Lantheus Holdings, Inc.
Unaudited Pro Forma Condensed Combined Balance Sheet
As of September 30, 2019
(in thousands)

	Historical		Pro forma adjustments	(Note 6)	Pro forma combined company
	Lantheus Holdings	Progenics after reclassifications (Note 4)			
Assets					
Current assets					
Cash and cash equivalents	\$ 78,062	\$ 64,493	\$ (44,227)	(d,g)	\$ 98,328
Accounts receivable, net	40,632	6,174	—		46,806
Inventory	30,596	—	—		30,596
Other current assets	5,096	5,136	—		10,232
Total current assets	<u>154,386</u>	<u>75,803</u>	<u>(44,227)</u>		<u>185,962</u>
Property, plant and equipment, net	113,531	9,254	—		122,785
Intangibles, net	7,786	7,099	382,917	(c)	397,802
Goodwill	15,714	17,847	13,407	(i)	46,968
Deferred tax assets, net	77,745	—	4,803	(e)	82,548
Other long-term assets	33,247	20,049	6,955	(b)	60,251
Total assets	<u>\$ 402,409</u>	<u>\$ 130,052</u>	<u>\$ 363,855</u>		<u>\$ 896,316</u>
Liabilities and stockholders' equity					
Current liabilities					
Current portion of long-term debt and other borrowings	\$ 10,166	\$ 6,437	\$ (6,437)	(d)	\$ 10,166
Accounts payable	16,492	674	—		17,166
Accrued expenses and other liabilities	32,928	13,033	14,575	(b,f)	60,536
Total current liabilities	<u>59,586</u>	<u>20,144</u>	<u>8,138</u>		<u>87,868</u>
Asset retirement obligations	12,560	—	—		12,560
Long-term debt, net and other borrowings	186,373	34,489	(34,489)	(d)	186,373
Other long-term liabilities	42,724	19,482	4,443	(b,e)	66,649
Total liabilities	<u>301,243</u>	<u>74,115</u>	<u>(21,908)</u>		<u>353,450</u>
Stockholders' equity					
Preferred stock	—	—	—	(h)	—
Common stock	392	112	104	(a,h)	608
Additional paid-in capital	248,694	722,615	(265,503)	(a,h)	705,806
Accumulated deficit	(146,923)	(666,485)	650,857	(d,f,g,h)	(162,551)
Accumulated other comprehensive income (loss)	(997)	(305)	305	(h)	(997)
Total stockholders' equity	<u>101,166</u>	<u>55,937</u>	<u>385,763</u>		<u>542,866</u>
Total liabilities and stockholders' equity	<u>\$ 402,409</u>	<u>\$ 130,052</u>	<u>\$ 363,855</u>		<u>\$ 896,316</u>

The accompanying notes are an integral part of these unaudited pro forma condensed combined financial statements.

Lantheus Holdings, Inc.
Unaudited Pro Forma Condensed Combined Statement of Operations
For the Year Ended December 31, 2018
(in thousands, except per share data)

	Historical		Pro forma adjustments	(Note 7)	Pro forma combined company
	Lantheus Holdings	Progenics after reclassifications (Note 4)			
Revenues	\$343,374	\$ 15,622	\$ —		\$358,996
Cost of goods sold	168,489	—	8,794	(b)	177,283
Gross profit	174,885	15,622	(8,794)		181,713
Operating expenses:					
Sales and marketing	43,159	8,590	(223)	(d)	51,526
General and administrative	50,167	15,041	(1,420)	(b,c,d)	63,788
Research and development	17,071	35,147	(901)	(d)	51,317
Intangible impairment charge	—	23,200	—		23,200
Total operating expenses	110,397	81,978	(2,544)		189,831
Operating income (loss)	64,488	(66,356)	(6,250)		(8,118)
Interest expense	17,405	4,962	(4,962)	(e)	17,405
Other income	(2,465)	(2,029)	667	(e)	(3,827)
Income (loss) before income taxes	49,548	(69,289)	(1,955)		(21,696)
Income tax expense (benefit)	9,030	(1,632)	(15,637)	(f)	(8,239)
Net income (loss)	\$ 40,518	\$ (67,657)	\$ 13,682		\$ (13,457)
Net income (loss) per common share:					
Basic	\$ 1.06				\$ (0.22)
Diluted	\$ 1.03				\$ (0.22)
Weighted-average common shares outstanding:					
Basic	38,233		21,623	(g)	59,856
Diluted	39,501		20,355	(g)	59,856

The accompanying notes are an integral part of these unaudited pro forma condensed combined financial statements.

Lantheus Holdings, Inc.
Unaudited Pro Forma Condensed Combined Statement of Operations
For the Nine Months Ended September 30, 2019
(in thousands, except per share data)

	Historical		Pro forma adjustments	(Note 7)	Pro forma combined company
	Lantheus Holdings	Progenics after reclassifications (Note 4)			
Revenues	\$257,991	\$ 19,860	\$ —		\$277,851
Cost of goods sold	127,745	1,810	10,988	(b)	140,543
Gross profit	<u>130,246</u>	<u>18,050</u>	<u>(10,988)</u>		<u>137,308</u>
Operating expenses:					
Sales and marketing	31,496	8,878	(176)	(d)	40,198
General and administrative	43,943	27,705	(9,223)	(a,b,c,d)	62,425
Research and development	15,584	36,911	(500)	(d)	51,995
Total operating expenses	<u>91,023</u>	<u>73,494</u>	<u>(9,899)</u>		<u>154,618</u>
Operating income (loss)	39,223	(55,444)	(1,089)		(17,310)
Interest expense	11,491	3,352	(3,352)	(e)	11,491
Loss on extinguishment of debt	3,196	—	—		3,196
Other income	(1,695)	(1,519)	654	(e)	(2,560)
Income (loss) before income taxes	26,231	(57,277)	1,609		(29,437)
Income tax expense (benefit)	5,014	—	(14,084)	(f)	(9,070)
Net income (loss)	<u>\$ 21,217</u>	<u>\$ (57,277)</u>	<u>\$ 15,693</u>		<u>\$ (20,367)</u>
Net income (loss) per common share:					
Basic	<u>\$ 0.55</u>				<u>\$ (0.34)</u>
Diluted	<u>\$ 0.53</u>				<u>\$ (0.34)</u>
Weighted-average common shares outstanding:					
Basic	<u>38,901</u>		<u>21,623</u>	(g)	<u>60,524</u>
Diluted	<u>40,123</u>		<u>20,401</u>	(g)	<u>60,524</u>

The accompanying notes are an integral part of these unaudited pro forma condensed combined financial statements.

**NOTES TO THE UNAUDITED PRO FORMA CONDENSED
COMBINED FINANCIAL STATEMENTS**

1. Description of the merger

On October 1, 2019, Lantheus Holdings entered into a definitive merger agreement under which Lantheus Holdings will acquire Progenics. Under the terms of the merger agreement, each share of Progenics common stock issued and outstanding, will be converted into 0.2502 shares of Lantheus Holdings common stock. In addition, Lantheus Holdings will issue replacement awards, subject to the exchange ratio of 0.2502, for each vested and unvested Progenics stock option outstanding and unexercised immediately before the closing of the merger. See “The Merger Agreement—Treatment of Progenics Stock Options” beginning on page 153 of the accompanying joint proxy statement/prospectus for a more detailed explanation.

Based on the closing price of Lantheus Holdings common stock of \$20.75 on November 1, 2019, the common stock component of the purchase price is \$448.7 million. The total estimated purchase price inclusive of the fair value of the portion of the replacement awards attributable to precombination services is \$457.3 million.

The transaction is subject to approval by Lantheus Holdings and Progenics stockholders and the satisfaction of customary closing conditions and regulatory approvals. Lantheus Holdings and Progenics expect to complete the transaction in the first quarter of 2020.

2. Basis of presentation

The unaudited pro forma condensed combined financial statements were prepared using the acquisition method of accounting and were based on the historical financial statements of Lantheus Holdings and Progenics. Certain reclassifications have been made to the historical financial statements of Progenics to conform to Lantheus Holdings’ presentation, which are discussed in more detail in “Note 4. Historical Progenics.”

The acquisition method of accounting is based on ASC 805 and utilizes the fair value concepts in ASC 820.

ASC 805 requires, among other things, that certain assets acquired and liabilities assumed be recognized at their fair values as of the acquisition date. In addition, ASC 805 establishes that the consideration transferred be measured at the closing date of the merger at fair value based upon the then-current market price of Lantheus Holdings common stock; this particular requirement will likely result in a per share equity component that is different from the amount assumed in these unaudited pro forma condensed combined financial statements, and that difference may be material.

ASC 820 defines the term “fair value” and sets forth the valuation requirements for any asset or liability measured at fair value. Fair value is defined in ASC 820 as “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.” This is an exit price concept for the valuation of the asset or liability. In addition, market participants are assumed to be buyers and sellers in the principal (or the most advantageous) market for the asset or liability. Fair value measurements for an asset assume the highest and best use by these market participants. As a result of these standards, Lantheus Holdings may be required to record assets which are not intended to be used or sold and/or to value assets at fair value measures that do not reflect Lantheus Holdings’ intended use of those assets. Many of these fair value measurements can be highly subjective and it is also possible that other professionals, applying reasonable judgment to the same facts and circumstances, could develop and support a range of alternative estimated amounts.

Under ASC 805, acquisition-related transaction costs are not included as a component of consideration transferred but are accounted for as expenses in the period in which the costs are incurred. Total transaction costs in connection with the merger are estimated to be approximately \$30.6 million, which does not include the impacts of any revenue, cost or other operating synergies that may result from the merger or any related restructuring costs that may be contemplated.

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The anticipated merger related transaction costs expected to be incurred after September 30, 2019 are reflected in the unaudited pro forma condensed combined balance sheet as an increase to accrued expenses and other liabilities and an increase to accumulated deficit. All transaction expenses that were incurred by Lantheus Holdings and Progenics have been eliminated from the unaudited pro forma condensed combined statement of operations for the nine months ended September 30, 2019 as these costs do not have a continuing impact. No transaction costs in connection with the merger were incurred by either Lantheus Holdings or Progenics during the year ended December 31, 2018.

3. Accounting policies

The unaudited pro forma condensed combined financial statements do not assume any differences in accounting policies, except as described below, as Lantheus Holdings is not aware of any differences that would have a material impact on the unaudited pro forma condensed combined financial statements. Further review of Progenics' detailed accounting policies following the completion of the merger may result in the identification of additional differences between the accounting policies of the two companies that, when conformed, could have a material impact on the financial statements of the combined company. Certain reclassifications have been made to the historical financial statements of Progenics to conform to Lantheus Holdings' presentation, which are discussed in more detail in "Note 4. Historical Progenics."

4. Historical Progenics

Certain reclassifications have been made to the historical financial statements of Progenics to conform to Lantheus Holdings' presentation as follows:

Unaudited pro forma condensed combined balance sheet as of September 30, 2019

Item	Amount (in thousands)	Presentation in Progenics Financial Statements	Presentation in Unaudited Pro Forma Condensed Combined Balance Sheet
Operating right-of-use lease assets	\$ 13,681	Operating right-of-use lease assets	Other long-term assets
Current operating lease liabilities	572	Operating lease liabilities	Accrued expenses and other liabilities
Noncurrent operating lease liabilities	15,154	Noncurrent operating lease liabilities	Other long-term liabilities
Contingent consideration liability	4,300	Contingent consideration liability	Other long-term liabilities
Deferred tax liability	28	Deferred tax liability	Other long-term liabilities
Treasury stock	(2,741)	Treasury stock	Additional paid-in capital

Unaudited pro forma condensed combined statement of operations for the nine months ended September 30, 2019

Item	Amount (in thousands)	Presentation in Progenics Financial Statements	Presentation in Unaudited Pro Forma Condensed Combined Statement of Operations
Sales and marketing	\$ 8,878	Selling, general, and administrative	Sales and marketing
General and administrative	26,389	Selling, general, and administrative	General and administrative
Change in contingent consideration liability	1,316	Change in contingent consideration liability	General and administrative
Interest expense	(3,352)	Interest (expense) income and other income, net	Interest expense
Other income	1,519	Interest (expense) income and other income, net	Other income

Unaudited pro forma condensed combined statement of operations for the year ended December 31, 2018

Item	Amount (in thousands)	Presentation in Progenics Financial Statements	Presentation in Unaudited Pro Forma Condensed Combined Statement of Operations
Sales and marketing	\$ 8,590	Selling, general, and administrative	Sales and marketing
General and administrative	20,841	Selling, general, and administrative	General and administrative
Change in contingent consideration liability	(5,800)	Change in contingent consideration liability	General and administrative
Interest expense	(4,962)	Interest (expense) income and other income, net	Interest expense
Other income	2,029	Interest (expense) income and other income, net	Other income

5. Estimate of consideration expected to be transferred in the merger and preliminary purchase price allocation

The following is a preliminary estimate of the consideration expected to be transferred to affect the merger (in thousands, except share and per share data):

Progenics shares outstanding at September 30, 2019	86,421,634
Exchange ratio	0.2502
Equivalent Lantheus Holdings shares to be issued	21,622,693
Closing price of Lantheus Holdings common stock on November 1, 2019	\$ 20.75
Estimated fair value of share consideration	<u>\$ 448,671</u>
Estimated fair value of replacement options issued related to precombination services	8,657
Estimated fair value of total consideration to be transferred	<u>\$ 457,328</u>

The preliminary estimate of consideration expected to be transferred reflected in these unaudited pro forma condensed combined financial statements does not purport to represent what the actual consideration transferred will be when the merger is completed. For purposes of these unaudited pro forma condensed combined financial statements, the market price per share of Lantheus Holdings common stock on November 1, 2019 and the Progenics shares of common stock and share-based compensation awards outstanding as of September 30, 2019 were used to calculate the estimate of consideration expected to be transferred. Ultimately, the fair value of equity securities issued as the consideration transferred will be measured using the market price per share of Lantheus Holdings common stock on the closing date. Assuming a 10% change in the closing price per share of the Lantheus Holdings common stock, the estimated fair value of share consideration transferred would increase or decrease by approximately \$45 million, which would be reflected in these unaudited pro forma condensed combined financial statements as an increase or decrease to goodwill.

The preliminary estimate of the fair value of share-based compensation awards relates to certain options to purchase shares of Progenics common stock that will be converted into Lantheus Holdings stock options to purchase shares of Lantheus Holdings common stock. Given that Lantheus Holdings is obligated to grant replacement awards in conjunction with the merger, the fair value of the replacement awards attributable to precombination services was included in the total consideration transferred.

The number of shares of Lantheus Holdings common stock issued to holders of Progenics common stock and replacement share-based compensation awards is dependent on the number of Progenics shares of common stock and options to purchase shares of Progenics common stock outstanding on the closing date of the merger.

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The following is a preliminary estimate of the assets to be acquired and liabilities to be assumed by Lantheus Holdings in the merger, reconciled to the estimate of consideration expected to be transferred (in thousands):

Cash and cash equivalents		\$ 21,766
Accounts receivable		6,174
Other current assets		5,136
Property, plant and equipment	(a)	9,254
Intangible assets	(b)	390,016
Deferred tax assets, net	(c)	4,803
Other long-term assets		27,004
Accounts payable		(674)
Accrued expenses and other liabilities		(13,480)
Other long-term liabilities		(23,925)
Goodwill	(d)	31,254
Estimate of consideration expected to be transferred		<u>\$457,328</u>

- (a) A preliminary fair value estimate of \$9.3 million, equivalent to the current net book value, has been assigned to property, plant and equipment to be acquired, primarily consisting of machinery and equipment, leasehold improvements, computer software and equipment and construction in progress.
- (b) A preliminary fair value estimate of \$390.0 million has been assigned to identifiable intangible assets acquired, consisting primarily of currently marketed product rights, licenses and in-process research and development (“IPR&D”).

The fair value of identifiable intangible assets is determined using either an income-based method referred to as the multi-period excess earnings method (“MPEEM”) or a probability weighted expected return method (“PWERM”). The more significant assumptions inherent in the application of the MPEEM include the amount and timing of projected future cash flows (including revenue, cost of sales, research and development costs, sales and marketing expenses, other general and administrative costs and income taxes), the level of and return for other assets that contribute to the subject assets’ ability to generate cash flows, and the discount rate selected to measure the risks inherent in the future cash flows. The more significant assumptions inherent in the application of the PWERM include the amount and timing of future cash flows (including milestone and/or royalty payments), the timing and probability of such payments occurring and the discount rate selected to measure the remaining risks inherent in the future cash flows. Of the total \$7.1 million historical book value of Progenics’ intangible assets as of September 30, 2019, \$2.4 million related to acquired technology and manufacturing know-how, the book value of which was determined to approximate fair value for purposes of these unaudited condensed combined pro forma financial statements.

The estimated fair value of the identifiable intangible assets and a preliminary estimate of their estimated useful lives are as follows (in thousands):

	<u>Estimated fair value</u>	<u>Estimated useful life (in years)</u>
Currently marketed product*	\$ 165,700	17
Licenses	63,300	14
Technology	1,299	10
Manufacturing know-how	1,117	6.5
IPR&D**	158,600	N/A
Total	<u>\$390,016</u>	

* The currently marketed product had previously been classified as an indefinite-lived IPR&D asset until July 30, 2018, at which point the product was commercially approved by the U.S. Food and Drug Administration (the “FDA”). Upon approval from the FDA, Progenics assigned the intangible asset an

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estimated useful life and began recognizing amortization expense. As such, the pro forma adjustment to amortization expense to the unaudited pro forma condensed combined statement of operations for the year ended December 31, 2018 includes the incremental amount of straight-line amortization expense from the date of FDA approval through December 31, 2018 at the asset's acquisition-date fair value and over its estimated useful life.

** As discussed above, acquired IPR&D assets are initially recognized at fair value and are classified as indefinite-lived assets until the successful completion or abandonment of the associated research and development efforts. Accordingly, during the research and development period after the closing date of the merger, these assets will not be amortized into earnings; instead these assets will be subject to periodic impairment testing. Upon successful completion of the development process for an acquired IPR&D project, determination as to the useful life of the asset will be made; at that point in time, the asset would then be considered a finite-lived intangible asset and Lantheus Holdings would begin to amortize the asset into earnings over its estimated useful life.

- (c) Represents the preliminary estimate of deferred taxes primarily resulting from net operating losses, partially offset by the fair value adjustments for intangible assets. This estimate was determined based on the fair value adjustments at an estimated blended statutory tax rate of 25.3%. The estimate of deferred taxes is preliminary and is subject to change based upon Lantheus Holdings' final determination of the fair values of the assets acquired and liabilities assumed as well as the applicable statutory tax rates and realizability of the deferred taxes. As of each reporting date, Lantheus Holdings considers new evidence, both positive and negative, that could affect its view of the future realization of deferred tax assets. Based on all available evidence, including the impact of intangible assets acquired as part of this transaction, our history of earnings, and forecasts of future income, Lantheus Holdings has determined that there is sufficient positive evidence to conclude that it is more likely than not that as of September 30, 2019, additional net deferred tax assets of \$4.8 million are realizable. It therefore removed the valuation allowance on Progenics' historical deferred tax assets. Under Section 382 of the Code, a corporation that undergoes an "ownership change" may be subject to certain limitations on its ability to utilize its net operating losses ("NOLs") and credits to offset and reduce future taxable income and tax. As such, Lantheus Holdings' and Progenics' ability to use its NOLs may be limited due to "ownership changes", including any such "ownership change" that is caused by the merger. Actual results will differ from the amounts reflected in the unaudited pro forma condensed combined financial statements once the final acquisition accounting by Lantheus Holdings has been completed.
- (d) The preliminary estimate of goodwill arising from the merger is \$31.3 million. Goodwill is calculated as the difference between the fair value of the consideration expected to be transferred and the fair values assigned to the assets acquired and liabilities assumed. The goodwill is attributable to the workforce of the business and the value of synergies expected to arise after the merger. The pro forma adjustment to goodwill is as follows (in thousands):

	As of September 30, 2019
Estimated goodwill related to the merger	\$ 31,254
Less: Historical Progenics' goodwill	17,847
Total	<u>\$ 13,407</u>

The acquisition method of accounting is dependent upon certain valuations that are provisional and subject to change. Accordingly, the pro forma adjustments are preliminary and made solely for the purpose of providing these unaudited pro forma condensed combined financial statements. Differences between these preliminary estimates and the final acquisition accounting for the merger will occur and these differences could have a material impact on the accompanying unaudited pro forma condensed combined financial statements and the future results of operations and financial position of the combined company.

6. Pro forma adjustments to the unaudited pro forma condensed combined balance sheet in connection with the merger

The unaudited pro forma condensed combined balance sheet reflects the proposed combination of Lantheus Holdings and Progenics using the acquisition method of accounting as of September 30, 2019. This note should be read in conjunction with “Note 1. Description of the merger,” “Note 2. Basis of presentation” and “Note 5. Estimate of consideration expected to be transferred in the merger and preliminary purchase price allocation.”

Adjustments included in the column under the heading “Pro forma adjustments” represent the following:

(a) Estimated fair value of consideration transferred

Reflects the adjustment to record merger consideration of \$457.3 million (including \$448.7 million related to the common stock component of the purchase price and \$8.7 million related to the fair value of the portion of the replacement awards attributable to precombination services). Of the total consideration transferred, \$0.2 million is recorded as an increase to common stock and \$457.1 million is recorded as an increase to additional paid-in capital.

(b) Leases

Reflects the adjustment of \$4.9 million to the acquired lease liability, of which there is a current portion of \$0.4 million and a noncurrent portion of \$4.5 million, for leases in which Progenics is the lessee to record those leases at the present value of the remaining lease payments as if the leases were new leases of Lantheus Holdings at the acquisition date. A pro forma adjustment of \$7.0 million has also been made to the right-of-use asset to measure it at an amount equal to the lease liability on the acquisition date.

(c) Intangible assets

Reflects the adjustment to record Progenics’ intangible assets at their estimated fair value of \$390.0 million and to eliminate the book value of Progenics’ historical intangible assets (\$7.1 million). IPR&D of \$158.6 million will be capitalized and accounted for as indefinite-lived intangible assets and will be subject to impairment testing until completion or abandonment of the projects. Upon successful completion of each project and launch of the product, Lantheus Holdings will make a separate determination of the useful life of the IPR&D intangibles and Lantheus Holdings will begin to amortize the asset into earnings over its estimated useful life. Refer to Note 5(b) above for additional information.

(d) Long-term debt

Reflects the adjustment to settle Progenics’ long-term debt of \$40.9 million, which includes the elimination of Progenics’ historical deferred financing costs of \$0.6 million to goodwill, and to record a \$1.2 million prepayment penalty to accumulated deficit using an aggregate of \$42.7 million of Progenics’ historical cash and cash equivalents. Progenics is required to repay its long-term debt per the terms of merger, and as such, the debt will not be assumed by Lantheus Holdings as part of the merger.

(e) Deferred taxes

Reflects the preliminary estimate of deferred income taxes primarily resulting from net operating losses, partially offset by the fair value adjustments for identifiable intangible assets. This estimate was determined based on the fair value adjustments at an estimated 25.3% U.S. federal and state statutory tax rate. Refer to Note 5(c) above for additional information.

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(f) Transaction costs

Reflects the adjustment for estimated transaction costs related to the merger of \$14.1 million that were not previously recorded in the historical combined financial statements. These costs are reflected as an increase in accrued expenses and other liabilities and an increase to accumulated deficit in the unaudited pro forma condensed combined balance sheet.

(g) Progenics retention payments

Reflects the adjustment to record post-combination compensation expense of \$1.5 million related to retention payments payable on the closing date of the merger to certain existing Progenics employees. The adjustment is reflected as a reduction to cash and cash equivalents and increase to accumulated deficit in the unaudited pro forma condensed combined balance sheet. The total amount of retention payments owed to certain existing Progenics employees is \$3.0 million. The unaudited pro forma condensed combined balance sheet does not include an adjustment for the remaining \$1.5 million of retention payments as those payments are contingent upon the employees' continued employment through a specified period of six months after the closing date of the merger and the related expense will begin to accrue upon the closing of the merger. Additionally, as there is no continuing impact, these costs are not included in the unaudited pro forma condensed combined statements of operations. The retention payments were determined to be for the benefit of Lantheus Holdings and will be recorded as post-combination compensation expense in Lantheus Holdings' consolidated statement of operations. Refer to "Interests of Progenics' Directors and Executive Officers in the Merger—Retention Payment Agreements" beginning on page 181 of the accompanying joint proxy statement/prospectus for a more detailed explanation.

(h) Stockholders' equity

Reflects the adjustment to eliminate Progenics' historical stockholders' equity.

(i) Goodwill

Reflects the adjustment to goodwill of \$13.4 million, which represents the excess of the preliminary consideration transferred over the fair value of the assets acquired and liabilities assumed. Refer to Note 5(d) above for additional information.

7. Pro forma adjustments to the unaudited pro forma condensed combined statements of operations in connection with the merger

The unaudited pro forma condensed combined statements of operations reflect the proposed combination of Lantheus Holdings and Progenics using the acquisition method of accounting as of January 1, 2018. This note should be read in conjunction with "Note 1. Description of the merger," "Note 2. Basis of presentation" and "Note 5. Estimate of consideration expected to be transferred in the merger and preliminary purchase price allocation."

Adjustments included in the column under the heading "Pro forma adjustments" represent the following:

(a) Transaction costs

Reflects the adjustment to eliminate the transaction costs incurred by Lantheus Holdings and Progenics related to the merger of \$8.3 million that were incurred for the nine months ended September 30, 2019. As there is no continuing impact, the impact of these costs is not included in the unaudited pro forma condensed combined statements of operations. No transaction costs in connection with the merger were incurred by either Lantheus Holdings or Progenics during the year ended December 31, 2018. The impact of the incremental transaction costs accrued for on the unaudited pro forma condensed combined balance sheet in Note 6(f) above are not included in the unaudited pro forma condensed combined statements of operations as they have no continuing impact on the combined company.

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(b) Amortization of intangibles

Reflects the adjustment to amortization expense to:

- (i) include an estimate of intangible asset amortization based on the straight-line method for acquired definite-lived intangible assets of \$11.0 million for the nine months ended September 30, 2019 and \$8.8 million for the year ended December 31, 2018 within cost of goods sold; and
- (ii) eliminate Progenics' historical intangible asset amortization expense of \$0.8 million for the nine months ended September 30, 2019 and \$0.5 million for the year ended December 31, 2018 within general and administrative expenses.

As IPR&D intangible assets are indefinite-lived intangible assets, no amortization related to IPR&D is reflected in the unaudited pro forma condensed combined statements of operations. See "Note 5. Estimate of consideration expected to be transferred in the merger and preliminary purchase price allocation" for additional information.

(c) Leasing

Reflects the adjustment of incremental rent expense of \$0.5 million for the nine months ended September 30, 2019 and \$0.6 million for the year ended December 31, 2018 related to the leases acquired from Progenics as if the leases were new leases of Lantheus Holdings at the acquisition date in accordance with acquisition accounting.

(d) Stock-based compensation expense

Reflects the adjustment to reduce stock-based compensation expense by \$1.3 million for the nine months ended September 30, 2019 and \$2.7 million for the year ended December 31, 2018, which related to the replacement options issued to existing Progenics optionholders. The aggregate fair value of those awards, totaling \$14.0 million, was determined using the Black-Scholes option pricing model using a stock price of \$20.75 per share, which was the last reported sale price of Lantheus Holdings' common stock on November 1, 2019. Of that amount, \$8.7 million relates to the fair value of the replacement awards for precombination services and was allocated to purchase consideration. Additionally, \$5.3 million was excluded from purchase consideration and will be recognized as compensation expense in the post-combination period over the remaining service periods of the related awards. Refer to the tables below for a summary of the line items within each unaudited pro forma condensed combined statement of operations that reflect this adjustment (in thousands):

	Nine months ended September 30, 2019	Year ended December 31, 2018
Research and development	\$ (500)	\$ (901)
General and administrative	(624)	(1,544)
Sales and marketing	(176)	(223)
Total stock-based compensation expense	<u>\$ (1,300)</u>	<u>\$ (2,668)</u>

(e) Elimination of interest expense and interest income

Reflects the adjustment for the elimination of historical Progenics' interest expense, which includes the amortization of deferred financing costs, of \$3.4 million for the nine months ended September 30, 2019 and \$5.0 million for the year ended December 31, 2018 as the related borrowings were settled by Progenics with cash on hand prior to the completion of the merger. In addition, the adjustment also reflects the elimination of historical Progenics' interest income of \$0.7 million for the nine months ended September 30, 2019 and \$0.7 million for the year ended December 31, 2018 resulting from the use of cash on hand to settle these borrowings. Progenics is required to repay its long-term debt per the terms of merger, and as such, the debt will not be assumed by Lantheus Holdings as part of the merger.

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(f) Income taxes

Reflects the income tax effects of the pro forma adjustments based on an estimated blended statutory tax rate of 25.3% in effect for both the nine months ended September 30, 2019 and for the year ended December 31, 2018 as well as income tax adjustments for Progenics losses that could not be benefited previously due to its valuation allowance in the periods presented. The effective tax rate of the combined company could be significantly different than the estimated blended statutory tax rate assumed for purposes of preparing the unaudited pro forma condensed combined financial statements. Refer to Note 5(c) above for additional information.

(g) Weighted-average number of shares and net income (loss) per share

The unaudited pro forma combined basic net income (loss) per share for the periods presented have been adjusted by the 21,622,693 Lantheus Holdings common shares expected to be issued in connection with the merger, which are assumed outstanding for the nine months ended September 30, 2019 and for the year ended December 31, 2018 for pro forma purposes. The unaudited pro forma diluted net income (loss) per share for the nine months ended September 30, 2019 and the year ended December 31, 2018 is equal to the unaudited pro forma basic net income (loss) per share due to the combined company's pro forma net loss. The weighted average common shares outstanding used to compute diluted net income (loss) per share for the nine months ended September 30, 2019 and for the year ended December 31, 2018 have been adjusted by 1,222,000 shares and 1,268,000 shares, respectively, due to net loss reported in those periods on a pro forma basis.

8. Items not included in the unaudited pro forma condensed combined financial statements

The unaudited pro forma condensed combined statements of operations do not include the impacts of any revenue, cost or other operating synergies that may result from the merger or any related restructuring costs that may be contemplated.

The unaudited pro forma condensed combined statements of operations do not include any non-recurring transaction costs incurred by Lantheus Holdings or Progenics after September 30, 2019 as those costs are not expected to have a continuing impact on the operations of the combined business.

The unaudited pro forma condensed combined statements of operations do not include an adjustment for \$3.0 million of retention payments to be paid to certain employees of Progenics contingent upon their continued employment as those expenses are not expected to have a continuing impact on the operations of the combined business. The unaudited pro forma condensed combined balance sheet does not include an adjustment for \$1.5 million of retention payments to be paid to certain employees of Progenics contingent upon their continued employment through a specified period of six months after the closing date of the merger as that expense will begin to accrue upon the closing of the merger.

The unaudited pro forma condensed combined statements of operations do not include the impacts of any amortization related to the IPR&D intangible assets as these assets are indefinite-lived intangible assets. Upon successful completion of the development process for an acquired IPR&D project, determination as to the useful life of the asset will be made; at that point in time, the asset would then be considered a finite-lived intangible asset and Lantheus Holdings would begin to amortize the asset into earnings over its estimated useful life.

COMPARATIVE PER SHARE MARKET PRICE AND DIVIDEND INFORMATION

Market Prices

The shares of Lantheus Holdings common stock are traded on the Nasdaq Global Market under the symbol “LNTH” and the shares of Progenics common stock are traded on the Nasdaq Global Select Market under the symbol “PGNX.” The following table sets forth, for the calendar periods indicated, the high and low sales prices per share of Lantheus Holdings common stock as reported on the Nasdaq Global Market and the high and low sales prices per share of Progenics common stock as reported on the Nasdaq Global Select Market.

	Shares of Lantheus Holdings Common Stock		Shares of Progenics Common Stock	
	High	Low	High	Low
2016:				
First Calendar Quarter	\$ 3.38	\$ 1.76	\$ 6.13	\$ 3.61
Second Calendar Quarter	4.37	1.82	5.75	4.00
Third Calendar Quarter	10.10	3.46	7.09	4.19
Fourth Calendar Quarter	10.85	7.61	9.78	4.84
2017:				
First Calendar Quarter	\$ 14.25	\$ 7.95	\$ 11.72	\$ 8.15
Second Calendar Quarter	17.85	10.65	9.56	6.10
Third Calendar Quarter	20.45	15.05	7.39	4.60
Fourth Calendar Quarter	24.10	17.15	7.81	5.16
2018:				
First Calendar Quarter	\$ 24.45	\$ 14.45	\$ 8.63	\$ 5.01
Second Calendar Quarter	19.95	13.55	9.12	6.48
Third Calendar Quarter	16.60	12.80	9.42	5.45
Fourth Calendar Quarter	19.31	12.59	6.54	3.62
2019:				
First Calendar Quarter	\$ 25.49	\$ 14.57	\$ 4.99	\$ 3.96
Second Calendar Quarter	28.48	23.23	6.19	4.02
Third Calendar Quarter	29.80	20.33	6.31	3.42
Fourth Calendar Quarter (through November 8, 2019)	25.33	17.85	6.22	4.58

The following table sets forth the closing sale price per share of Lantheus Holdings common stock as reported on the Nasdaq Global Market and closing sale price per share of Progenics common stock as reported on the Nasdaq Global Select Market on October 1, 2019, the last trading day prior to the public announcement of the transaction, and on November 8, 2019, the most recent trading day prior to the date of this joint proxy statement/prospectus for which this information was available. The table also shows the implied value of the merger consideration for each share of Progenics common stock. This implied value was calculated by multiplying the closing sale price of a share of Lantheus Holdings common stock on the relevant date by the exchange ratio.

	Shares of Lantheus Holdings Common Stock	Shares of Progenics Common Stock	Implied Per Share Value of Merger Consideration
October 1, 2019	\$ 24.03	\$ 4.95	\$ 6.01
November 8, 2019	\$ 21.46	\$ 6.03	\$ 5.37

The market prices of shares of Lantheus Holdings common stock and shares of Progenics common stock have fluctuated since the date of the announcement of the merger agreement and will continue to fluctuate from the date of this joint proxy statement/prospectus to the dates of the Lantheus Holdings special meeting and the Progenics special meeting and the date the merger is completed. No assurance can be given concerning the

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market prices of shares of Lantheus Holdings common stock or shares of Progenics common stock before completion of the merger or shares of Lantheus Holdings common stock after completion of the merger. The exchange ratio is fixed in the merger agreement, but the market price of shares of Lantheus Holdings common stock (and therefore the value of the merger consideration) when received by Progenics stockholders after the merger is completed could be greater than, less than or the same as shown in the table above. Accordingly, Progenics stockholders are advised to obtain current market quotations for shares of Lantheus Holdings common stock and shares of Progenics common stock in deciding whether to vote for adoption of the merger agreement.

This information should be read together with the consolidated financial statements and related notes of Lantheus Holdings and Progenics that are incorporated by reference in this document and with the unaudited pro forma combined financial data included under the section titled "Certain Unaudited Pro Forma Condensed Combined Financial Statements" beginning on page 50 of this joint proxy statement/prospectus.

Dividends

Since becoming a publicly traded company in 2015, Lantheus Holdings has never declared or paid any cash dividends on shares of Lantheus Holdings common stock. Under the terms of the merger agreement, during the period before completion of the merger, Lantheus Holdings is not permitted to declare, set aside, make or pay any dividend or other distribution, other than dividends or distributions by wholly-owned subsidiaries of Lantheus Holdings to Lantheus Holdings or another wholly-owned subsidiary of Lantheus Holdings.

Progenics has never declared or paid any cash dividends on shares of Progenics common stock. Under the terms of the merger agreement, during the period before completion of the merger, Progenics is not permitted to declare, set aside, make or pay any dividend or other distribution, other than dividends or distributions by wholly-owned subsidiaries of Progenics to Progenics or another wholly-owned subsidiary of Progenics.

After completion of the merger, each former Progenics stockholder who holds shares of Lantheus Holdings common stock into which shares of Progenics common stock have been converted in connection with the merger will receive all dividends or other distributions declared and paid on shares of Lantheus Holdings common stock with a record date on or after the completion of the merger. However, no dividend or other distribution having a record date after completion of the merger will actually be paid with respect to any shares of Lantheus Holdings common stock into which shares of Progenics common stock have been converted in connection with the merger until the certificates formerly representing shares of Progenics common stock have been surrendered or the book-entry shares formerly representing shares of Progenics common stock have been transferred to the exchange agent in accordance with the merger agreement, at which time any such accrued dividends and other distributions on those shares of Lantheus Holdings common stock will be paid without interest. Subject to the limitations set forth in the merger agreement described above, any future dividends by Lantheus Holdings will be made at the discretion of the Lantheus Holdings Board. Subject to the limitations set forth in the merger agreement described above, any future dividends by Progenics will be made at the discretion of the Progenics Board. There can be no assurance that any future dividends will be declared or paid by Lantheus Holdings or Progenics or as to the amount or timing of those dividends, if any.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This joint proxy statement/prospectus (including information included or incorporated by reference herein) contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that are subject to risks and uncertainties and are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Such statements are based upon current plans, estimates and expectations that are subject to various risks and uncertainties. The inclusion of forward-looking statements should not be regarded as a representation that such plans, estimates and expectations will be achieved. Words such as “anticipates,” “expects,” “projects,” “intends,” “believes,” “may,” “will,” “should,” “could,” “targets,” “plans,” “contemplates,” “estimates,” “seeks,” “predicts,” “potential,” “opportunity,” “creates” and words and terms of similar substance used in connection with any discussion of future plans, actions or events identify forward-looking statements. All statements, other than historical facts, including the expected timing of the closing of the merger; the ability of the parties to complete the merger considering the various closing conditions; the expected benefits of the merger, such as efficiencies, cost savings, synergies, revenue growth, creating shareholder value, growth potential, market profile, enhanced competitive position, and financial strength and flexibility; the competitive ability and position of the combined company; and any assumptions underlying any of the foregoing, are forward-looking statements.

Important factors that could cause actual results to differ materially from Lantheus Holdings’ and Progenics’ plans, estimates or expectations could include, but are not limited to, the following:

- the risk that Lantheus Holdings stockholders do not approve the stock issuance proposal;
- the risk that Progenics stockholders do not approve the merger agreement proposal;
- the risk that the merger is subject to required governmental and regulatory approvals and that governmental and regulatory authorities may impose conditions that could have an adverse effect on Lantheus Holdings, Progenics or the combined company;
- the risk that the conditions to the closing of the merger may not be satisfied;
- the effect of the announcement of the merger on the ability of Lantheus Holdings or Progenics to retain and hire key personnel and maintain relationships with customers, suppliers and others with whom Lantheus Holdings or Progenics does business, or on Lantheus Holdings’ or Progenics’ operating results and business generally;
- that the merger agreement limits the ability of the parties to pursue alternatives to the merger;
- the risk that potential litigation in connection with the merger may affect the timing or occurrence of the merger or result in significant costs;
- the risk that the merger may not be accretive and may cause dilution to Lantheus Holdings’ earnings per share, which may negatively affect the market price of its common stock;
- risks that the anticipated benefits of the merger may not be fully realized or may take longer to realize than expected;
- the risk that the merger may involve unexpected costs, liabilities or delays;
- risks relating to the tax treatment of the merger;
- the risk that the combined company may be unable to successfully integrate the Progenics business into the Lantheus Holdings business and realize the anticipated benefits of the merger;
- that the combined company is expected to incur substantial expenses related to the completion of the merger and integration of the Progenics business;
- Lantheus Holdings or Progenics may be adversely affected by other economic, business, and/or competitive factors; and

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- other risks to the completion of the merger, including the risk that the merger will not be completed within the expected time period or at all.

The foregoing list sets forth some, but not all, of the factors that could have an impact upon Lantheus Holdings' and Progenics' ability to achieve results described in any forward-looking statements. A further list and description of these and other factors can be found in the section entitled "Risk Factors" beginning on page 34 of this joint proxy statement/prospectus and elsewhere in this joint proxy statement/prospectus. In addition, all of the forward-looking statements Lantheus Holdings or Progenics make in this document are qualified by the information incorporated by reference into this joint proxy statement/prospectus, including, but not limited to (i) the information contained under this heading and (ii) the information discussed under the sections entitled "Risk Factors" in Lantheus Holdings' Annual Report on Form 10-K for the fiscal year ended December 31, 2018 and Lantheus Holdings' Quarterly Report on Form 10-Q for the quarterly periods ended September 30, 2019, June 30, 2019 and March 31, 2019 and in Progenics' Annual Report on Form 10-K for the fiscal year ended December 31, 2018 and Progenics' Quarterly Reports on Form 10-Q for the quarterly periods ended September 30, 2019, June 30, 2019 and March 31, 2019. See the section entitled "Where You Can Find More Information" beginning on page 222 of this joint proxy statement/prospectus.

It should also be noted that projected financial information for the combined businesses of Lantheus Holdings and Progenics is based on management's estimates, assumptions and projections and has not been prepared in conformance with the applicable accounting requirements of Regulation S-X of the Exchange Act relating to pro forma financial information, and the required pro forma adjustments have not been applied and are not reflected therein. None of this information should be considered in isolation from, or as a substitute for, the historical financial statements of Lantheus Holdings or Progenics.

Persons reading this joint proxy statement/prospectus are cautioned not to place undue reliance on these forward-looking statements. These forward-looking statements are and will be based upon management's then-current views and assumptions regarding future events and operating performance, and are applicable only as of the dates of such statements. You also should understand that it is not possible to predict or identify all such factors and that this list should not be considered a complete statement of all potential risks and uncertainties. Investors also should realize that if underlying assumptions prove inaccurate or if unknown risks or uncertainties materialize, actual results could vary materially from Lantheus Holdings' or Progenics' projections. Except as otherwise required by law, neither Lantheus Holdings nor Progenics is under any obligation, and each expressly disclaim any obligation, to update, alter, or otherwise revise any forward-looking statements included in this joint proxy statement/prospectus or elsewhere, whether written or oral, that may be made from time to time relating to any of the matters discussed in this joint proxy statement/prospectus, whether as a result of new information, future events or otherwise, as of any future date.

THE COMPANIES

Lantheus Holdings

Lantheus Holdings was incorporated under the laws of the State of Delaware in November 2007 under the name ACP Lantern Holdings, Inc. In 2008, ACP Lantern Holdings, Inc. changed its name to Lantheus MI Holdings, Inc. and, in 2014, changed its name again to Lantheus Holdings, Inc. Lantheus Holdings is a leader in the development, manufacturing, and commercialization of innovative diagnostic medical imaging agents and products across a range of imaging modalities, including echocardiography and nuclear imaging. Its commercial products are used by cardiologists, nuclear physicians, radiologists, internal medicine physicians, technologists and sonographers working in a variety of clinical settings.

Lantheus Holdings' portfolio of commercial products includes DEFINITY®, the leading ultrasound contrast imaging agent based on revenue and usage in the U.S., and TechneLite, a self-contained system or generator of technetium-99m, a radioactive isotope used by radiopharmacies to prepare various nuclear imaging agents. Since its launch in 2001, DEFINITY® has been used in imaging procedures in more than 11.5 million patients throughout the world. Additionally, as of December 31, 2018, Lantheus Holdings estimates that TechneLite had approximately one third of the U.S. technetium generator market.

Lantheus Holdings common stock, par value \$0.01 per share, (NASDAQ: LNTH) is listed on the Nasdaq Global Market under the symbol "LNTH." The principal executive offices of Lantheus Holdings are located at 331 Treble Cove Road, North Billerica, Massachusetts 01862; its telephone number is (978) 671-8001; and its website is www.lantheus.com. Information on Lantheus Holdings' Internet website is not incorporated by reference into or otherwise part of this joint proxy statement/prospectus.

This joint proxy statement/prospectus incorporates important business and financial information about Lantheus Holdings from other documents that are not included in or delivered with this joint proxy statement/prospectus. For a list of the documents that are incorporated by reference, see "Where You Can Find More Information" beginning on page 222 of this joint proxy statement/prospectus.

Progenics

Progenics, which has been listed on Nasdaq since 1997, was incorporated in Delaware in 1986, commenced principal operations in 1988, and throughout has been engaged primarily in research and development efforts, establishing corporate collaborations and related activities. Progenics is an oncology company focused on the development and commercialization of innovative targeted medicines and artificial intelligence to find, fight and follow cancer. Progenics' pipeline includes therapeutic agents designed to precisely target cancer (AZEDRA®, 1095 and PSMA TTC), as well as a prostate-specific membrane antigen ("PSMA") targeted imaging agents for prostate cancer (PyL™ and 1404).

Highlights of Progenics' recent progress include the first commercial revenue for AZEDRA®, completion of enrollment of the PyL™ pivotal Phase 3 trial, and dosing of the first patient in the 1095 open label Phase 2 trial.

Progenics common stock, par value \$0.0013 per share, is listed on the Nasdaq Global Select Market under the symbol "PGNX." The principal executive offices of Progenics are located at One World Trade Center, 47th Floor, New York, New York 10007; its telephone number is (646) 975-2500; and its website is www.progenics.com. Information on Progenics' Internet website is not incorporated by reference into or otherwise part of this joint proxy statement/prospectus.

This joint proxy statement/prospectus incorporates important business and financial information about Progenics from other documents that are not included in or delivered with this joint proxy statement/prospectus. For a list of the documents that are incorporated by reference, see "Where You Can Find More Information" beginning on page 222 of this joint proxy statement/prospectus.

Plato Merger Sub, Inc.

Merger Sub was incorporated under the laws of the State of Delaware on September 26, 2019, and is a wholly-owned subsidiary of Lantheus Holdings. Merger Sub was formed solely for the purpose of completing the merger. Merger Sub has not carried on any activities or operations to date, except for activities incidental to its formation and activities undertaken in connection with the merger. By operation of the merger, Merger Sub will be merged with and into Progenics, with Progenics surviving the merger as a wholly-owned subsidiary of Lantheus Holdings.

The principal executive offices of Merger Sub are located at 331 Treble Cove Road, North Billerica, Massachusetts 01862, and its telephone number is (978) 671-8001.

SPECIAL MEETING OF STOCKHOLDERS OF LANTHEUS HOLDINGS

Lantheus Holdings is providing this joint proxy statement/prospectus to its stockholders in connection with the solicitation of proxies to be voted at the Lantheus Holdings special meeting of stockholders (or any adjournment or postponement thereof) that Lantheus Holdings has called to consider and vote on a proposal to approve the stock issuance and a proposal to approve the adjournment from time to time of the Lantheus Holdings special meeting if necessary to solicit additional proxies if there are not sufficient votes at the time of the Lantheus Holdings special meeting, or any adjournment or postponement thereof, to approve the stock issuance.

Date, Time and Location

Together with this joint proxy statement/prospectus, Lantheus Holdings is also sending Lantheus Holdings stockholders a notice of the Lantheus Holdings special meeting and a form of proxy card that is solicited by the Lantheus Holdings Board for use at the Lantheus Holdings special meeting to be held on [●], at [●], at [●], Eastern Time, and any adjournments or postponements of the Lantheus Holdings special meeting.

If you plan to attend the Lantheus Holdings special meeting, you will need to provide evidence that you are a stockholder as of the close of business on the record date. This can be a copy of your proxy card or a brokerage statement showing your shares as of the close of business on the record date. You should also bring photo identification. If you hold your shares in street name and wish to vote in person at the meeting, you will need to contact the broker, bank or other nominee that holds your shares in order to obtain a legal proxy from that broker, bank or other nominee to present at the special meeting.

Purpose

At the Lantheus Holdings special meeting, Lantheus Holdings stockholders will be asked to consider and vote on the following proposals:

- the stock issuance proposal; and
- the Lantheus Holdings adjournment proposal.

Under Lantheus Holdings' bylaws, the business to be conducted at the Lantheus Holdings special meeting will be limited to the proposals set forth in the notice to Lantheus Holdings stockholders provided with this joint proxy statement/prospectus.

Recommendation of the Lantheus Holdings Board of Directors

For the reasons set forth in this joint proxy statement/prospectus, the Lantheus Holdings Board unanimously determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger and the stock issuance, are advisable, fair to and in the best interests of Lantheus Holdings and its stockholders. **The Lantheus Holdings Board unanimously recommends that Lantheus Holdings stockholders vote "FOR" the stock issuance proposal.** For the factors considered by the Lantheus Holdings Board in reaching this decision, see "Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Lantheus Holdings' Reasons for the Merger; Recommendation of the Lantheus Holdings Board of Directors that Lantheus Holdings Stockholders Approve the Stock Issuance" beginning on page 109 of this joint proxy statement/prospectus.

In addition, the Lantheus Holdings Board unanimously recommends that Lantheus Holdings stockholders vote "FOR" the Lantheus Holdings adjournment proposal. See "Lantheus Holdings Proposal II: Adjournment of the Lantheus Holdings Special Meeting" beginning on page 183 of this joint proxy statement/prospectus.

Lantheus Holdings Record Date; Outstanding Shares; Stockholders Entitled to Vote

The Lantheus Holdings Board has fixed the close of business on [●] as the record date for the determination of the Lantheus Holdings stockholders entitled to notice of and to vote at the Lantheus Holdings special meeting or any adjournment or postponement of the Lantheus Holdings special meeting. Only Lantheus Holdings stockholders of record at the record date are entitled to receive notice of, and to vote at, the Lantheus Holdings special meeting or any adjournment or postponement thereof. As of the close of business on the record date, there were [●] shares of Lantheus Holdings common stock, \$0.01 par value per share, outstanding and entitled to vote at the Lantheus Holdings special meeting. Each holder of shares of Lantheus Holdings common stock is entitled to one vote for each share of Lantheus Holdings common stock owned at the record date.

Quorum

The presence at the Lantheus Holdings special meeting, in person or by proxy, of the holders of a majority of the outstanding shares of Lantheus Holdings common stock at the record date (the close of business on November 8, 2019) and entitled to vote at the meeting will constitute a quorum. Elections to abstain from voting will be deemed present at the Lantheus Holdings special meeting for the purpose of determining the presence of a quorum. Shares of Lantheus Holdings common stock held in “street name” with respect to which the beneficial owner fails to give voting instructions to its broker, bank or other nominee, and shares of Lantheus Holdings common stock with respect to which the beneficial owner otherwise fails to vote, will not be deemed present at the Lantheus Holdings special meeting for the purpose of determining the presence of a quorum. There must be a quorum for the vote on the stock issuance proposal to be taken at the Lantheus Holdings special meeting. Failure of a quorum to be present at the Lantheus Holdings special meeting will necessitate an adjournment of the meeting by the Chairperson of the meeting and will subject Lantheus Holdings to additional expense.

Required Vote

The affirmative vote of at least a majority of the votes cast by holders of outstanding shares of Lantheus Holdings common stock at a duly called and held meeting of Lantheus Holdings stockholders at which a quorum is present is required to approve the stock issuance proposal in connection with the merger. **Lantheus Holdings cannot complete the merger unless its stockholders approve the stock issuance proposal.** A majority of the votes cast means that the number of votes cast “for” the stock issuance proposal must exceed the number of votes cast “against.” A Lantheus Holdings stockholder’s abstention from voting, the failure of a Lantheus Holdings stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Lantheus Holdings stockholder to vote, will have no effect on the approval of the stock issuance proposal, except to the extent it results in there being insufficient shares present at the Lantheus Holdings special meeting to establish a quorum.

Approval of the Lantheus Holdings adjournment proposal, assuming a quorum is present, requires the affirmative vote of the holders of a majority of the shares of Lantheus Holdings common stock present in person or represented by proxy at the Lantheus Holdings special meeting and entitled to vote thereat. A Lantheus Holdings stockholder’s abstention from voting on the Lantheus Holdings adjournment proposal will have the same effect as a vote “AGAINST” the approval of this proposal. The failure of a Lantheus Holdings stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Lantheus Holdings stockholder to vote, will have no effect on the approval of the Lantheus Holdings adjournment proposal, except to the extent it results in there being insufficient shares present at the Lantheus Holdings special meeting to establish a quorum.

Stock Ownership of and Voting by Lantheus Holdings Directors and Executive Officers

As of the close of business on the record date, Lantheus Holdings’ directors and executive officers and their affiliates beneficially owned and had the right to vote in the aggregate [●] shares of Lantheus Holdings common

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stock at the Lantheus Holdings special meeting, which represents approximately [●]% of the shares of Lantheus Holdings common stock entitled to vote at the Lantheus Holdings special meeting. Each of Lantheus Holdings' directors and executive officers is expected, as of the date of this joint proxy statement/prospectus, to vote his or her shares of Lantheus Holdings common stock "FOR" the stock issuance proposal and "FOR" the Lantheus Holdings adjournment proposal, although none of Lantheus Holdings' directors or executive officers has entered into any agreement requiring them to do so.

Voting of Shares

Via the Internet or by Telephone

If you hold shares of Lantheus Holdings common stock directly in your name as a stockholder of record, you may vote via the Internet or by telephone by following the instructions on the enclosed proxy card. In order to vote your shares via the Internet or by telephone, you will need the control number on your proxy card (which is unique to each Lantheus Holdings stockholder to ensure all voting instructions are genuine and to prevent duplicate voting).

If you hold shares of Lantheus Holdings common stock in "street name" through a broker, bank or other nominee, you may provide voting instructions via the Internet or by telephone only if Internet or telephone voting is made available by your broker, bank or other nominee. Please follow the voting instructions provided by your broker, bank or other nominee with these materials.

By Mail

If you hold shares of Lantheus Holdings common stock directly in your name as a stockholder of record, in order to vote by mail, you may submit a proxy card. You will need to complete, sign and date your proxy card and return it using the postage-paid return envelope provided.

If you hold shares of Lantheus Holdings common stock in "street name" through a broker, bank or other nominee, in order to provide voting instructions by mail you will need to complete, sign and date the voting instruction form provided by your broker, bank or other nominee with these materials and return it in the postage-paid return envelope provided. Your broker, bank or other nominee must receive your voting instruction form in sufficient time to vote your shares.

In Person

If you hold shares of Lantheus Holdings common stock directly in your name as a stockholder of record, you may vote in person at the Lantheus Holdings special meeting. Stockholders of record also may be represented by another person at the Lantheus Holdings special meeting by executing a proper proxy designating that person and having that proper proxy be presented to the inspectors of election with the applicable ballot at the Lantheus Holdings special meeting.

If you hold shares of Lantheus Holdings common stock in "street name," meaning through a broker, bank or other nominee, you must obtain a written legal proxy from that broker, bank or other nominee and present it to the inspectors of election with your ballot to be able to vote in person at the Lantheus Holdings special meeting. To request a legal proxy, please contact your broker, bank or other nominee.

Generally

If you hold shares of Lantheus Holdings common stock in "street name" through a broker, bank or other nominee, you must obtain a written legal proxy from that broker, bank or other nominee and present it to the inspectors of election with your ballot to be able to vote in person at the Lantheus Holdings special meeting. To request a legal proxy, please contact your broker, bank or other nominee.

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If your shares of Lantheus Holdings common stock are held in an account at a broker, bank or other nominee, you must instruct the broker, bank or other nominee on how to vote your shares. In general, in accordance with applicable stock exchange rules, if your shares of Lantheus Holdings common stock are held in “street name” and you do not instruct your broker how to vote your shares, your broker, in its discretion, may either leave your shares unvoted or vote your shares on routine matters. However, a broker is precluded from exercising its voting discretion with respect to non-routine or “significant” matters, such as the approval of the stock issuance proposal and the approval of the Lantheus Holdings adjournment proposal. None of the proposals at the Lantheus Holdings special meeting are routine matters. As a result, if you hold your shares in “street name,” through a brokerage account, your broker will not be able to exercise its discretion to vote uninstructed shares on any of the proposals presented at the Lantheus Holdings special meeting.

If a beneficial owner of shares of Lantheus Holdings common stock held in “street name” does not give voting instructions to its broker, bank or other nominee, then those shares will not be present in person or represented by proxy at the Lantheus Holdings special meeting. A beneficial owner’s failure to instruct its broker, bank or other nominee how to vote shares of Lantheus Holdings common stock held in “street name” will have no effect on the approval of the stock issuance proposal or the Lantheus Holdings adjournment proposal, except to the extent it results in there being insufficient shares present at the Lantheus Holdings special meeting to establish a quorum.

All shares represented by each properly completed and valid proxy received before or at the Lantheus Holdings special meeting will be voted in accordance with the instructions given in the proxy. If a Lantheus Holdings stockholder signs a proxy card and returns it without giving instructions for voting on any proposal, the shares of Lantheus Holdings common stock represented by that proxy card will be voted “FOR” the stock issuance proposal and “FOR” the Lantheus Holdings adjournment proposal.

Your vote is very important, regardless of the number of shares you own. Whether or not you expect to attend the Lantheus Holdings special meeting in person, please vote or otherwise submit a proxy to vote your shares as promptly as possible so that your shares may be represented and voted at the Lantheus Holdings special meeting. If your shares of Lantheus Holdings common stock are held in the name of a bank, broker or other nominee, please follow the instructions on the voting instruction form furnished to you by such bank, broker or other nominee.

Revocability of Proxies; Changing Your Vote

You may change your vote or revoke your proxy at any time before your proxy is voted at the Lantheus Holdings special meeting. You may revoke the authority granted by your proxy at any time prior to its use by:

- sending a written revocation of a proxy to Lantheus Holdings, Inc., 331 Treble Cove Road, North Billerica, MA 01862, Attention: Investor Relations, that bears a date later than the date of the proxy you want to revoke and is received prior to the date of the Lantheus Holdings special meeting;
- submitting a valid, later-dated proxy or voting instructions via the Internet or by telephone before 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Lantheus Holdings special meeting, or by mail that is received prior to the Lantheus Holdings special meeting; or
- attending the Lantheus Holdings special meeting (or, if the special meeting is adjourned or postponed, attending the applicable adjourned or postponed meeting) and voting in person, which automatically will cancel any proxy previously given, or revoking your proxy in person, but your attendance alone will not revoke any proxy previously given.

If you hold your shares in “street name” through a broker, bank or other nominee, you must contact your broker, bank or other nominee to change your vote or obtain a written legal proxy to vote your shares if you wish to cast your vote in person at the Lantheus Holdings special meeting.

All shares that have been properly voted and not revoked will be voted at the special meeting.

Solicitation of Proxies; Expenses of Solicitation

This joint proxy statement/prospectus is being provided to holders of shares of Lantheus Holdings common stock in connection with the solicitation of proxies by the Lantheus Holdings Board to be voted at the Lantheus Holdings special meeting and at any adjournments or postponements thereof. Lantheus Holdings will bear all costs and expenses in connection with the solicitation of proxies, including the costs of filing, printing and mailing this joint proxy statement/prospectus for the Lantheus Holdings special meeting. Lantheus Holdings has engaged Innisfree M&A Incorporated to assist in the solicitation of proxies for the Lantheus Holdings special meeting and will pay Innisfree M&A Incorporated a fee of \$25,000 for services in connection with the Lantheus Holdings special meeting.

In addition to solicitation by mail, directors, officers and employees of Lantheus Holdings or its subsidiaries may solicit proxies from stockholders by telephone, telegram, email, personal interview or other means. Lantheus Holdings currently expects not to incur any costs beyond those customarily expended for a solicitation of proxies in connection with approval of any issuance of shares of Lantheus Holdings common stock. Directors, officers and employees of Lantheus Holdings will not receive additional compensation for their solicitation activities, but may be reimbursed for reasonable out-of-pocket expenses incurred by them in connection with the solicitation. Brokers, dealers, commercial banks, trust companies, fiduciaries, custodians and other nominees have been requested to forward proxy solicitation materials to their customers, and such nominees will be reimbursed for their reasonable out-of-pocket expenses. Lantheus Holdings will pay the costs associated with the Lantheus Holdings special meeting and solicitation of proxies, including the costs of mailing the proxy materials.

Householding

“Householding” is a procedure Lantheus Holdings adopted whereby stockholders of record who have the same last name and address and who receive the proxy materials by mail will receive only one copy of the proxy materials unless Lantheus Holdings has received contrary instructions from one or more of the stockholders. This procedure reduces printing and mailing costs.

If you wish to receive a separate copy of the proxy materials, now or in the future, at the same address, or if you are currently receiving multiple copies of the proxy materials at the same address and wish to receive a single copy, you may contact Lantheus Holdings’ Investor Relations department at (978)-671-8842 or ir@lantheus.com, or by writing to Lantheus Holdings, Inc., 331 Treble Cove Road, North Billerica, MA 01862, Attention: Investor Relations.

If you are a beneficial owner (your shares are held in the name of a bank, broker or other nominee), the bank, broker or other nominee may deliver only one copy of the joint proxy statement/prospectus to stockholders who have the same address unless the bank, broker or other nominee has received contrary instructions from one or more of the stockholders. If you wish to receive a separate copy of the joint proxy statement/prospectus now or in the future, you may contact Lantheus Holdings at the address or phone number above and Lantheus Holdings will promptly deliver a separate copy. Beneficial owners sharing an address who are currently receiving multiple copies of the joint proxy statement/prospectus and wish to receive a single copy in the future, should contact their bank, broker or other nominee to request that only a single copy be delivered to all stockholders at the shared address in the future.

Adjournment

Lantheus Holdings stockholders are being asked to approve a proposal that will give the Lantheus Holdings Board authority to adjourn the Lantheus Holdings special meeting from time to time for the purpose of soliciting additional proxies in favor of the stock issuance proposal if there are not sufficient votes at the time of the Lantheus Holdings special meeting, or any adjournment or postponement thereof, to approve the stock issuance proposal. If the Lantheus Holdings adjournment proposal is approved, the Lantheus Holdings special meeting

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could be adjourned to any date. In addition, the Lantheus Holdings Board, with or without stockholder approval, could postpone the Lantheus Holdings special meeting before it commences, whether for the purpose of soliciting additional proxies or for other reasons. If the Lantheus Holdings special meeting is adjourned for the purpose of soliciting additional proxies, stockholders who have already submitted their proxies will be able to revoke them at any time prior to their use. If you sign and return a proxy and do not indicate how you wish to vote on any proposal, or if you indicate how you wish to vote on the stock issuance proposal and leave the other proposal blank, your shares will be voted in favor of the Lantheus Holdings adjournment proposal even if you voted against the stock issuance proposal.

Other Information

The matters to be considered at the Lantheus Holdings special meeting are of great importance to the stockholders of Lantheus Holdings. Accordingly, you are urged to read and carefully consider the information contained in or incorporated by reference into this joint proxy statement/prospectus and submit your proxy via the Internet or by telephone or complete, date, sign and promptly return the enclosed proxy card in the enclosed postage-paid envelope. **If you submit your proxy via the Internet or by telephone, you do not need to return the enclosed proxy card.**

Assistance

If you have any questions or require any assistance with authorizing a proxy or voting your shares, or if you need additional copies of the proxy materials, please contact:



Innisfree M&A Incorporated
501 Madison Avenue, 20th Floor
New York, New York 10022
Telephone (Toll-Free): (877) 750-9497
International Callers: (412) 232-3651
Banks and brokers may call collect: (212) 750-5833

SPECIAL MEETING OF STOCKHOLDERS OF PROGENICS

Progenics is providing this joint proxy statement/prospectus to its stockholders in connection with the solicitation of proxies to be voted at the Progenics special meeting of stockholders (or any adjournment or postponement thereof) that Progenics has called to consider and vote on (i) a proposal to adopt the merger agreement, (ii) a proposal to approve the adjournment from time to time of the Progenics special meeting if necessary to solicit additional proxies if there are not sufficient votes to adopt the merger agreement at the time of the Progenics special meeting or any adjournment or postponement thereof and (iii) a proposal to approve, on an advisory (non-binding) basis, the compensation that will or may be paid or provided by Progenics to its named executive officers in connection with the merger.

Date, Time and Location

Together with this joint proxy statement/prospectus, Progenics is also sending Progenics stockholders a notice of the Progenics special meeting and a form of proxy card that is solicited by the Progenics Board for use at the Progenics special meeting to be held at [●] on [●], at [●], Eastern Time, and any adjournments or postponements of the Progenics special meeting.

Only stockholders or their proxy holders may attend the Progenics special meeting. If you are attending the Progenics special meeting in person, you will be required to register as a stockholder or proxy holder and to show valid, government-issued identification before entering Progenics special meeting.

Purpose

At the Progenics special meeting, Progenics stockholders will be asked to consider and vote on the following proposals:

- the merger agreement proposal;
- the Progenics adjournment proposal; and
- the Progenics compensation advisory proposal.

Recommendation of the Progenics Board of Directors

For the reasons set forth in this joint proxy statement/prospectus, the Progenics Board unanimously determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger, are fair to and in the best interests of Progenics and its stockholders. **The Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the merger agreement proposal.** For the factors considered by the Progenics Board in reaching this decision, see “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Progenics’ Reasons for the Merger; Recommendation of the Progenics Board of Directors that Progenics Stockholders Adopt the Merger Agreement” beginning on page 116 of this joint proxy statement/prospectus.

The Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the Progenics adjournment proposal. See “Progenics Proposal II: Adjournment of the Progenics Special Meeting” beginning on page 184 of this joint proxy statement/prospectus.

In addition, the Progenics Board unanimously recommends that Progenics stockholders vote “FOR” the Progenics compensation advisory proposal. See “Progenics Proposal III: Advisory Vote On Merger-Related Executive Compensation Arrangements” beginning on page 185 of this joint proxy statement/prospectus.

Progenics Record Date; Outstanding Shares; Stockholders Entitled to Vote

The Progenics Board set the close of business on [●], 2019 as the record date for the determination of the Progenics stockholders entitled to notice of and to vote at the Progenics special meeting or any adjournment or

postponement of the Progenics special meeting. Only Progenics stockholders of record at the record date are entitled to receive notice of, and to vote at, the Progenics special meeting or any adjournment or postponement of the Progenics special meeting. As of the close of business on the record date, there were [●] shares of Progenics common stock outstanding and entitled to vote at the Progenics special meeting. Each holder of shares of Progenics common stock is entitled to one vote for each share of Progenics common stock owned at the record date.

Quorum

The presence at the Progenics special meeting, in person or by proxy, of the holders of a majority of the outstanding shares of Progenics common stock at the record date (the close of business on [●], 2019) and entitled to vote at the meeting will constitute a quorum. Elections to abstain from voting will be deemed present at the Progenics special meeting for the purpose of determining the presence of a quorum. Shares of Progenics common stock held in “street name” with respect to which the beneficial owner fails to give voting instructions to its broker, bank or other nominee, and shares of Progenics common stock with respect to which the beneficial owner otherwise fails to vote, will not be deemed present at the Progenics special meeting for the purpose of determining the presence of a quorum. There must be a quorum for the vote on the merger agreement proposal and the vote on the Progenics compensation advisory proposal to be taken at the Progenics special meeting. Failure of a quorum to be present at the Progenics special meeting will necessitate an adjournment of the meeting and will subject Progenics to additional expense.

Required Vote

The affirmative vote of the holders of a majority of shares of Progenics common stock outstanding and entitled to vote thereon is required to approve the merger agreement proposal. **Progenics cannot complete the merger and the merger consideration will not be paid unless its stockholders approve the merger agreement proposal and the other closing conditions specified in the merger agreement are met.** A Progenics stockholder’s abstention from voting, the failure of a Progenics stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee or any other failure of a Progenics stockholder to vote will have the same effect as a vote “AGAINST” the proposal to adopt the merger agreement.

Approval of the Progenics adjournment proposal (whether or not a quorum, as defined under Progenics’ by-laws, is present) requires the affirmative vote of the holders of a majority of the shares of Progenics common stock present in person or represented by proxy at the Progenics special meeting and entitled to vote thereat. For purposes of the Progenics adjournment proposal, “shares of Progenics common stock present in person or represented by proxy” consist of votes “for” or “against” as well as elections to abstain from voting on the proposal. As a result, a Progenics stockholder’s abstention from voting on the Progenics adjournment proposal will have the same effect as a vote “AGAINST” the approval of the proposal. The failure of a Progenics stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Progenics stockholder to vote, will have no effect on the approval of the proposal.

Approval on an advisory (non-binding) basis of the Progenics compensation advisory proposal (assuming a quorum, as defined under Progenics’ by-laws, is present) requires the affirmative vote of the holders of a majority of the votes cast in person or by proxy at the Progenics special meeting. For purposes of the Progenics compensation advisory proposal, “votes cast” means votes “for” or “against” the proposal. A Progenics stockholder’s abstention from voting, the failure of a Progenics stockholder who holds his or her shares in “street name” through a broker, bank or other nominee to give voting instructions to that broker, bank or other nominee, or any other failure of a Progenics stockholder to vote, will have no effect on the approval of this proposal, except to the extent it results in there being insufficient shares present at the Progenics special meeting to establish a quorum.

Stock Ownership of and Voting by Progenics Directors and Executive Officers

As of the close of business on the record date, Progenics' directors and executive officers and their affiliates beneficially owned and had the right to vote in the aggregate [●] shares of Progenics common stock at the Progenics special meeting, which represents approximately [●]% of the shares of Progenics common stock entitled to vote at the Progenics special meeting.

Each of Progenics' directors and executive officers is expected, as of the date of this joint proxy statement/prospectus, to vote his or her shares of Progenics common stock "FOR" the merger agreement proposal, "FOR" the Progenics adjournment proposal and "FOR" the Progenics compensation advisory proposal, although none of Progenics' directors or executive officers have entered into any agreement requiring them to do so.

Voting of Shares

Via the Internet or by Telephone

If you hold shares of Progenics common stock directly in your name as a stockholder of record, you may vote via the Internet or by telephone by following the instructions on the enclosed proxy card. In order to vote your shares via the Internet or by telephone, you will need the control number on your proxy card (which is unique to each Progenics stockholder to ensure all voting instructions are genuine and to prevent duplicate voting).

If you hold shares of Progenics common stock in "street name" through a broker, bank or other nominee, you may provide voting instructions via the Internet or by telephone only if Internet or telephone voting is made available by your broker, bank or other nominee. Please follow the voting instructions provided by your broker, bank or other nominee with these materials.

By Mail

If you hold shares of Progenics common stock directly in your name as a stockholder of record, in order to vote by mail, you may submit a proxy card. You will need to complete, sign and date your proxy card and return it using the postage-paid return envelope provided.

If you hold shares of Progenics common stock in "street name" through a broker, bank or other nominee, in order to provide voting instructions by mail you will need to complete, sign and date the voting instruction form provided by your broker, bank or other nominee with these materials and return it in the postage-paid return envelope provided. Your broker, bank or other nominee must receive your voting instruction form in sufficient time to vote your shares.

In Person

If you hold shares of Progenics common stock directly in your name as a stockholder of record, you may vote in person at the Progenics special meeting. Stockholders of record also may be represented by another person at the Progenics special meeting by executing a proper proxy designating that person and having that proper proxy be presented to the inspectors of election with the applicable ballot at the Progenics special meeting.

If you hold shares of Progenics common stock in "street name," meaning through a broker, bank or other nominee, you must obtain a written legal proxy from that broker, bank or other nominee and present it to the inspectors of election with your ballot to be able to vote in person at the Progenics special meeting. To request a legal proxy, please contact your broker, bank or other nominee.

Generally

If you hold shares of Progenics common stock in "street name" through a broker, bank or other nominee, you must obtain a written legal proxy from that broker, bank or other nominee and present it to the inspectors of election with your ballot to be able to vote in person at the Progenics special meeting. To request a legal proxy, please contact your broker, bank or other nominee.

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If your shares of Progenics common stock are held in an account at a broker, bank or other nominee, you must instruct the broker, bank or other nominee on how to vote your shares. In general, in accordance with applicable stock exchange rules, if your shares of Progenics common stock are held in “street name” and you do not instruct your broker how to vote your shares, your broker, in its discretion, may either leave your shares unvoted or vote your shares on routine matters. However, a broker is precluded from exercising its voting discretion with respect to non-routine or “significant” matters, such as the adoption of the merger agreement, the approval of the Progenics adjournment proposal and the approval of the Progenics compensatory advisory proposal. None of the proposals at the Progenics special meeting are routine matters. As a result, if you hold your shares in “street name,” through a brokerage account, your broker will not be able to exercise its discretion to vote uninstructed shares on any of the proposals presented at the Progenics special meeting.

If a beneficial owner of shares of Progenics common stock held in “street name” does not give voting instructions to its broker, bank or other nominee, then those shares will not be present in person or represented by proxy at the Progenics special meeting. A beneficial owner’s failure to instruct its broker, bank or other nominee how to vote shares of Progenics common stock held in “street name” will therefore have the same effect as a vote “AGAINST” the merger agreement proposal. A beneficial owner’s failure to instruct its broker, bank or other nominee how to vote shares of Progenics common stock held in “street name” will have no effect on the approval of the Progenics adjournment proposal or the Progenics compensation advisory proposal, except, with respect to the Progenics compensation advisory proposal, to the extent it results in there being insufficient shares present at the Progenics special meeting to establish a quorum.

All shares represented by each properly completed and valid proxy received before or at the Progenics special meeting will be voted in accordance with the instructions given in the proxy. If a Progenics stockholder signs a proxy card and returns it without giving instructions for voting on any proposal, the shares of Progenics common stock represented by that proxy card will be voted “FOR” the merger agreement proposal, “FOR” the Progenics adjournment proposal and “FOR” the Progenics compensation advisory proposal.

Your vote is very important, regardless of the number of shares you own. Whether or not you expect to attend the Progenics special meeting in person, please vote or otherwise submit a proxy to vote your shares as promptly as possible so that your shares may be represented and voted at the Progenics special meeting. If your shares of Progenics common stock are held in the name of a bank, broker or other nominee, please follow the instructions on the voting instruction form furnished to you by such bank, broker or other nominee.

Revocability of Proxies; Changing Your Vote

You may change your vote or revoke your proxy at any time before your proxy is voted at the Progenics special meeting. You may revoke the authority granted by your proxy at any time prior to its use by:

- sending a written revocation of a proxy to Progenics Pharmaceuticals, Inc., One World Trade Center, 47th Floor, Suite J, New York, New York 10007, Attention: Corporate Secretary that bears a date later than the date of the proxy you want to revoke and is received prior to the date of the Progenics special meeting;
- submitting a valid, later-dated proxy or voting instructions via the Internet or telephone before 11:59 p.m., Eastern Time, on the calendar day immediately preceding the Progenics special meeting, or by mail that is received prior to the Progenics special meeting; or
- attending the Progenics special meeting (or, if the Progenics special meeting is adjourned or postponed, attending the adjourned or postponed meeting) and voting in person, which automatically will cancel any proxy previously given, or revoking your proxy in person, but your attendance at the Progenics special meeting alone will not revoke any proxy previously given.

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If you hold your shares in “street name” through a broker, bank or other nominee, you must contact your broker, bank or other nominee to change your vote or obtain a written legal proxy to vote your shares if you wish to cast your vote in person at the Progenics special meeting.

Solicitation of Proxies; Expenses of Solicitation

This joint proxy statement/prospectus is being provided to holders of shares of Progenics common stock in connection with the solicitation of proxies by the Progenics Board to be voted at the Progenics special meeting and at any adjournments or postponements thereof. Progenics will bear all costs and expenses in connection with the solicitation of proxies, including the costs of filing, printing and mailing this joint proxy statement/prospectus for the Progenics special meeting. Progenics has engaged MacKenzie Partners, Inc. to assist in the solicitation of proxies for the Progenics special meeting and will pay MacKenzie Partners, Inc. an initial fee of approximately \$125,000, plus additional fees to be determined at the conclusion of the solicitation and reimbursement of reasonable out-of-pocket expenses.

In addition to solicitation by mail, directors, officers and employees of Progenics or its subsidiaries may solicit proxies from stockholders by telephone, telegram, email, personal interview or other means. Progenics currently expects not to incur any costs beyond those customarily expended for a solicitation of proxies in connection with the adoption of a merger agreement. Directors, officers and employees of Progenics will not receive additional compensation for their solicitation activities, but may be reimbursed for reasonable out-of-pocket expenses incurred by them in connection with the solicitation. Brokers, dealers, commercial banks, trust companies, fiduciaries, custodians and other nominees have been requested to forward proxy solicitation materials to their customers, and such nominees will be reimbursed for their reasonable out-of-pocket expenses. Progenics will pay the costs associated with the Progenics special meeting and solicitation of proxies, including the costs of mailing the proxy materials.

Householding

“Householding” is a procedure Progenics adopted whereby stockholders of record who have the same last name and address and who receive the proxy materials by mail will receive only one copy of the proxy materials unless Progenics has received contrary instructions from one or more of the stockholders. This procedure reduces printing and mailing costs.

If you wish to receive a separate copy of the proxy materials, now or in the future, at the same address, or if you are currently receiving multiple copies of the proxy materials at the same address and wish to receive a single copy, you may contact Progenics at (646) 975-2500 by writing c/o the Corporate Secretary at Progenics’ corporate headquarters located at One World Trade Center, 47th Floor, Suite J, New York, NY 10007.

If you are a beneficial owner (your shares are held in the name of a bank, broker or other nominee), the bank, broker or other nominee may deliver only one copy of the joint proxy statement/prospectus to stockholders who have the same address unless the bank, broker or other nominee has received contrary instructions from one or more of the stockholders. If you wish to receive a separate copy of the joint proxy statement/prospectus now or in the future, you may contact Progenics at the address or phone number above and Progenics will promptly deliver a separate copy. Beneficial owners sharing an address who are currently receiving multiple copies of the joint proxy statement/prospectus and wish to receive a single copy in the future, should contact their bank, broker or other nominee to request that only a single copy be delivered to all stockholders at the shared address in the future.

Adjournment

Progenics stockholders are being asked to approve a proposal that will give the Progenics Board authority to adjourn the Progenics special meeting from time to time for the purpose of soliciting additional proxies in favor

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of the merger agreement proposal if there are not sufficient votes at the time of the Progenics special meeting or any adjournment or postponement thereof, to approve the merger agreement proposal. If the Progenics adjournment proposal is approved, the Progenics special meeting could be adjourned to any date. In addition, the Progenics Board, with or without stockholder approval, could postpone the Progenics special meeting before it commences, whether for the purpose of soliciting additional proxies or for other reasons. If the Progenics special meeting is adjourned for the purpose of soliciting additional proxies, stockholders who have already submitted their proxies will be able to revoke them at any time prior to their use. If you sign and return a proxy and do not indicate how you wish to vote on any proposal, or if you indicate how you wish to vote on the merger agreement proposal or the Progenics advisory proposal and leave the Progenics adjournment proposal blank, your shares will be voted in favor of the Progenics adjournment proposal even if you voted against one or more of the other proposals.

Other Information

The matters to be considered at the Progenics special meeting are of great importance to the stockholders of Progenics. Accordingly, you are urged to read and carefully consider the information contained in or incorporated by reference into this joint proxy statement/prospectus and submit your proxy via the Internet or by telephone or complete, date, sign and promptly return the enclosed proxy card in the enclosed postage-paid envelope. **If you submit your proxy via the Internet or by telephone, you do not need to return the enclosed proxy card.**

Assistance

If you have any questions or require any assistance with authorizing a proxy or voting your shares, or if you need additional copies of the proxy materials, please contact:

MacKenzie Partners, Inc.
1407 Broadway, 27th Floor
New York, New York 10018
Toll: Free: (800) 322-2885
or
(212) 929-5500
Email: PGNX@mackenziepartners.com

LANTHEUS HOLDINGS PROPOSAL I: APPROVAL OF THE STOCK ISSUANCE AND PROGENICS PROPOSAL I: ADOPTION OF THE MERGER AGREEMENT

General

This joint proxy statement/prospectus is being provided to holders of shares of Progenics common stock in connection with the solicitation of proxies by the Progenics Board to be voted at the Progenics special meeting and at any adjournments or postponements of the Progenics special meeting. At the Progenics special meeting, Progenics will ask its stockholders to vote on (i) the merger agreement proposal, (ii) the Progenics adjournment proposal and (iii) the Progenics compensation advisory proposal.

This joint proxy statement/prospectus is being provided to holders of shares of Lantheus Holdings common stock in connection with the solicitation of proxies by the Lantheus Holdings Board to be voted at the Lantheus Holdings special meeting and at any adjournments or postponements of the Lantheus Holdings special meeting. At the Lantheus Holdings special meeting, Lantheus Holdings will ask its stockholders to vote on (i) the stock issuance proposal and (ii) the Lantheus Holdings adjournment proposal.

The merger agreement provides for the merger of Merger Sub with and into Progenics, with Progenics continuing as the surviving corporation and a wholly-owned subsidiary of Lantheus Holdings. **The merger will not be completed and the merger consideration will not be paid unless Progenics stockholders adopt the merger agreement and Lantheus Holdings stockholders approve the stock issuance and the other closing conditions specified in the merger agreement are met.** A copy of the merger agreement is attached as Annex A to this joint proxy statement/prospectus. You are urged to read the merger agreement in its entirety because it is the legal document that governs the merger. For additional information about the merger, see “The Merger Agreement—Structure of the Merger” and “The Merger Agreement—Merger Consideration” beginning on pages 150 and 151, respectively, of this joint proxy statement/prospectus.

Upon completion of the merger, each share of Progenics common stock will be converted into the right to receive 0.2502 of a share of Lantheus Holdings common stock. Based on the number of shares of Progenics common stock outstanding as of November 8, 2019, Lantheus Holdings expects to issue approximately 21,722,636 shares of Lantheus Holdings common stock to Progenics stockholders pursuant to the merger. The actual number of shares of Lantheus Holdings common stock to be issued pursuant to the merger will be determined at the completion of the merger based on the number of shares of Progenics common stock outstanding at such time. In addition, shares of Lantheus Holdings common stock may be issued from time to time following the effective time of the merger to holders of Progenics equity awards on the terms set forth in the merger agreement. See “The Merger Agreement—Treatment of Progenics Stock Options” beginning on page 153 of this joint proxy statement/prospectus for a more detailed explanation. Based on the number of fully diluted shares of Lantheus Holdings common stock and Progenics common stock outstanding as of November 8, 2019, it is estimated that, immediately after the completion of the merger, Lantheus Holdings stockholders will own approximately 65% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding) and former Progenics stockholders will own approximately 35% of the outstanding shares of common stock of the combined company (based on fully diluted shares outstanding). The exact equity stake of Lantheus Holdings stockholders and Progenics stockholders in the combined company immediately following the completion of the merger will depend on the number of fully diluted shares of Lantheus Holdings common stock and Progenics common stock outstanding immediately prior to the merger.

Background of the Merger and Certain Other Developments

The board of directors of each of Lantheus Holdings and Progenics, acting independently and with the advice of their respective management teams and financial advisors, periodically and in the ordinary course of business, review and assess their respective operations, financial performance, clinical, regulatory and commercial developments and industry conditions and their respective long-term business strategies and plans to enhance

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value for their respective stockholders. These reviews have, from time to time, included the evaluation and consideration of strategic acquisitions and divestitures, collaborations, in-licenses, out-licenses and other strategic transactions and opportunities.

In 2017 and 2018, the Lantheus Holdings Board and management team, in consultation with independent strategic consultants, developed and adopted a comprehensive strategic plan, key aspects of which included advancing its own clinical development program and potentially acquiring or licensing adjacent product portfolios and pipelines as a way to evolve outside of its existing product lines, diversify its existing revenues streams and accelerate revenue and margin growth. Since adopting that strategic plan, the Lantheus Holdings Board and management have, with advice from financial advisors including SVB Leerink, evaluated various transaction opportunities, including potential transactions with Progenics.

In June 2017, a representative of a potential strategic acquirer, which is referred to in this joint proxy statement/prospectus as Party A, discussed with Patrick Fabbio, Senior Vice President and Chief Financial Officer of Progenics, Party A's potential interest in acquiring certain assets of Progenics. From time to time thereafter in 2017 and 2018, representatives of Progenics and representatives of Party A engaged in further discussions regarding a potential acquisition of such assets of Progenics by Party A, which included entering into a confidentiality agreement that did not include a standstill.

In late 2017, a member of Lantheus Holdings' business development team reached out to a number of potential business partners and invited Progenics to an introductory meeting at the then-upcoming J.P. Morgan Healthcare Conference in San Francisco, California. In connection with that meeting, Lantheus Holdings and Progenics entered into a mutual confidentiality agreement on January 9, 2018. At that meeting on January 9, 2018, Mary Anne Heino, President and Chief Executive Officer and a director of Lantheus Holdings and other members of Lantheus Holdings management met with Mark Baker, Chief Executive Officer and a director of Progenics, Bryce Tenbarge, Senior Vice President, Commercial of Progenics, and another member of Progenics management and held general discussions about each company's business and discussed ways in which the companies could work together regarding the commercialization of certain Progenics products.

In 2017, Lantheus Holdings retained a financial advisor to assist it in evaluating a range of potential strategic alternatives and in defining parameters to guide its strategic and financial decision-making. On February 21, 2018, that financial advisor presented its analysis and recommendations to the Lantheus Holdings Board and members of Lantheus Holdings management. The presentation covered business development and mergers and acquisitions strategies and identified two specific potential acquisition targets, including Progenics. An overview of Progenics' business, a strategic rationale and other considerations for Lantheus Holdings' potential acquisition of Progenics and high level projected financial information were presented and discussed.

On August 15, 2018, members of Lantheus Holdings management held a conference call with members of Progenics management to discuss potential collaboration opportunities around AZEDRA® and other Progenics pipeline assets.

On November 2, 2018, members of Lantheus Holdings management met with the Chairman of the Lantheus Holdings Board, Brian Markison, to discuss potential business development opportunities, including a potential transaction with Progenics.

On November 27, 2018, Velan Capital L.P., which is referred to in this joint proxy statement/prospectus as Velan and which, as of such date, was known as Avego Capital, requested a brief phone call with Mr. Baker.

On November 29, 2018, Mr. Baker and representatives of Velan had a phone call to discuss the value of Progenics, including the value of AZEDRA® and Progenics' product candidate 1095.

On January 8, 2019, at the request of Lantheus Holdings, members of Progenics management and members of Lantheus Holdings management held preliminary discussions at the J.P. Morgan Healthcare Conference in San

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Francisco, California regarding ways in which Progenics and Lantheus Holdings could potentially work together in connection with the commercialization of certain Progenics products. The progress of the AZEDRA® commercial launch was discussed, and Lantheus Holdings management again expressed their interest in the Progenics portfolio of products and described Lantheus Holdings' capabilities related to radiopharmaceutical products.

On January 25, 2019, Robert Marshall, Chief Financial Officer of Lantheus Holdings, participated in discussions with representatives from SVB Leerink regarding certain capital markets and debt refinancing activities. During that meeting, SVB Leerink also presented a high level analysis of potential strategic acquisition transactions, including a possible all-stock acquisition of Progenics, based on publicly available information. On January 30, 2019, Ms. Heino and Etienne Montagut, Senior Vice President Corporate Development of Lantheus Holdings, met with representatives of SVB Leerink in-person to review the financial analysis prepared by SVB Leerink and to discuss potential next steps.

On February 18, 2019, Balaji Venkataraman, as Managing Partner of Velan, submitted a letter to the Progenics Board, which is referred to in this joint proxy statement/prospectus as the February 18 Letter. The February 18 Letter informed the Progenics Board of Velan's ownership of Progenics common stock and described Velan's views regarding Progenics' product candidate 1095, the AZEDRA® manufacturing and supply chain, AZEDRA®'s commercial launch and other operational and financial matters relating to Progenics.

On February 21, 2019, the Lantheus Holdings Board convened a regularly scheduled meeting, during which meeting members of Lantheus Holdings management reviewed with the Lantheus Holdings Board Lantheus Holdings management's ongoing evaluation of potential strategic business development plans and opportunities, which included a potential strategic transaction involving the acquisition of Progenics as well as other potential opportunities. During this meeting, the Lantheus Holdings Board evaluated the strategic rationale for making an acquisition proposal to Progenics. Representatives of SVB Leerink also attended and, together with members of Lantheus Holdings management, reviewed with the Lantheus Holdings Board a preliminary financial analysis relating to an acquisition of Progenics based on publicly available information, the strategic rationale for an acquisition of Progenics, financial analysis with respect to such an acquisition, various forms of consideration that could be provided to Progenics stockholders in such an acquisition, potential timing of due diligence, announcement and closing of such an acquisition, and the risks inherent in such an acquisition. The Lantheus Holdings Board thereafter authorized Lantheus Holdings management and SVB Leerink to explore a potential acquisition of Progenics with Progenics management.

On February 22, 2019, Peter Crowley, then the Chair of the Progenics Board, delivered a letter to Mr. Venkataraman confirming receipt of the February 18 Letter, noting that the Progenics Board would review the letter and consider Mr. Venkataraman's comments.

Between February 22, 2019 and March 13, 2019, Mr. Crowley and Mr. Venkataraman had multiple interactions regarding, among other things, the February 18 Letter and the potential nomination by Velan of director candidates to the Progenics Board.

In late February 2019, at the direction of members of Lantheus Holdings management, a representative of SVB Leerink contacted Progenics director Bradley L. Campbell to initiate a discussion regarding Progenics' strategic options. Mr. Campbell referred the SVB Leerink representative to Mr. Baker.

During the course of March 2019, a representative of SVB Leerink, on behalf of Lantheus Holdings, exchanged multiple communications with Mr. Baker to schedule a meeting to discuss a potential strategic transaction between Progenics and Lantheus Holdings. These communications resulted in the scheduling of a meeting between Progenics management and Lantheus Holdings management to be held on April 9, 2019.

On March 5, 2019, Lantheus Holdings formally engaged SVB Leerink as its financial advisor in connection with a possible acquisition of Progenics.

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On March 5, 2019, representatives of Party A and Progenics management held an in-person meeting to discuss an acquisition of certain assets of Progenics by Party A.

On March 6, 2019, the Chief Executive Officer of Party A sent to Mr. Baker correspondence indicating a specific interest in acquiring certain assets of Progenics and indicating a willingness to discuss potential terms of such a transaction.

On March 15, 2019, the deadline under Progenics' by-laws for eligible stockholders to provide Progenics notice of the stockholder's intention to nominate directors, Velan submitted to Progenics a notice of director nominations, in which Velan purported to notify Progenics of its nomination of six individuals, which are referred to in this joint proxy statement/prospectus as the Prior Velan Nominees, for election to the Progenics Board.

Also on March 15, 2019, representatives of Party A and Progenics management held a conference call regarding Party A's potential acquisition of certain assets of Progenics.

Between March 15, 2019 and April 4, 2019, representatives of Party A and Progenics management engaged in due diligence conference calls in connection with a potential acquisition of certain assets of Progenics by Party A. Thereafter, Party A did not provide a term sheet or indication of interest and did not have any further communication with Progenics or its representatives until Party A contacted Progenics again in early June 2019.

On March 19, 2019, the Progenics Board held a special meeting. Also present was Mr. Fabbio. Mr. Crowley discussed with the Progenics Board the February 18 Letter and the interactions that Mr. Crowley had with Mr. Venkataraman regarding the February 18 Letter and Velan's notice of director nominations dated March 15, 2019. Mr. Crowley also noted for the Progenics Board that he was scheduled to meet in-person with Mr. Venkataraman on March 25, 2019. Following discussion, the Progenics Board approved the engagement of legal and professional advisors as needed to assist Progenics management relating to, among other things, outreaches to Progenics by Velan and other efforts by Velan to change the composition of the Progenics Board.

On March 25, 2019, Mr. Crowley and Mr. Baker met in person with Mr. Venkataraman to further discuss the views previously expressed by Mr. Venkataraman regarding Progenics.

Between March 27, 2019 and April 16, 2019, representatives of Progenics and representatives of Velan had multiple interactions relating to various topics, including Mr. Venkataraman's views on the March 25, 2019 meeting, scheduling potential meetings between the Prior Velan Nominees and the Nominating and Corporate Governance Committee of the Progenics Board and whether Velan was a holder of record of shares of Progenics common stock at the time it submitted to Progenics a notice of director nominations, which was required by Section 3.05 of Progenics' by-laws.

On April 1, 2019, the Progenics Board held a regular meeting. Also present were certain members of Progenics management and outside counsel to Progenics. Such outside counsel to Progenics provided the Progenics Board with an update regarding delivery by Velan of a notice of director nominations and the recent activities relating thereto. The Progenics Board then discussed a stockholder proposal to amend Section 3.03 of Progenics' by-laws to allow certain holders of 20% of the outstanding shares of Progenics common stock to call special meetings of Progenics stockholders. Following discussion, the Progenics Board approved amended and restated by-laws of Progenics containing such amendment to Section 3.03 in the form proposed by a stockholder of Progenics.

On April 5, 2019, Velan filed with the SEC a Schedule 13D to report that, as of April 4, 2019, Velan collectively beneficially owned an aggregate of 6,233,796 shares, constituting approximately 7.4% of Progenics common stock outstanding. Following this Schedule 13D filing, representatives of SVB Leerink advised Lantheus Holdings of SVB Leerink's historical and ongoing relationship with Mr. Venkataraman and his affiliated businesses.

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On April 9, 2019, members of Lantheus Holdings management and representatives of SVB Leerink met with members of Progenics management at Progenics' offices in New York City. At that meeting, members of Lantheus Holdings management, at the direction of the Lantheus Holdings Board, expressed an interest in a potential acquisition of Progenics by Lantheus Holdings in which Progenics stockholders would receive Lantheus Holdings common stock. Progenics management expressed potential interest in a possible transaction and requested that a non-binding offer be provided.

On April 15, 2019, representatives of Velan communicated to representatives of Progenics that Velan sought to replace six of the seven members of the Progenics Board with Velan designees.

On April 18, 2019, members of Lantheus Holdings management and representatives of SVB Leerink met with the Finance & Strategy Committee of the Lantheus Holdings Board in New York and telephonically, during which the participants engaged in extensive discussions regarding its highest priority business opportunity, a potential acquisition of Progenics. The discussion focused on Progenics' leading assets and the potential timing, structure and economic return of a potential transaction. The Finance & Strategy Committee thereafter instructed Lantheus Holdings management to engage with, and learn more about, Progenics and to present the opportunity to the full Lantheus Holdings Board at the next regularly scheduled meeting.

Between April 18, 2019 and April 24, 2019, the Nominating and Corporate Governance Committee of the Progenics Board held in-person meetings with the Prior Velan Nominees to discuss each such nominee's qualifications to serve on the Progenics Board.

On April 22, 2019, the Progenics Board held a special meeting. Also present was Mr. Fabbio. Mr. Baker provided an update regarding recent activities with Velan, noting that through a review of the Progenics record holder list, it had been determined that Velan was not a stockholder of record on March 15, 2019, as Progenics' by-laws required to nominate directors to the Progenics Board (which requirement was present in Progenics' by-laws at such time and prior to March 15, 2019). The Progenics Board discussed a proposed letter to be sent to Velan indicating that Velan's notice of director nominations did not constitute a valid notice for the Annual Meeting of the Progenics Stockholders for 2019, which is referred to in this joint proxy statement/prospectus as the 2019 Progenics Annual Meeting, and following such discussion, the Progenics Board authorized the delivery of such letter to Velan. Mr. Baker then provided an update regarding Progenics' separate discussions with representatives of Lantheus Holdings and Party A regarding potential strategic transactions with Progenics.

Also on April 22, 2019, Progenics' outside counsel, O'Melveny, delivered a letter on behalf of Progenics to Velan and Mayer Brown LLP, Velan's counsel, notifying Velan that its notice of director nominations delivered to Progenics on March 15, 2019 failed to comply with Section 3.05 of Progenics' by-laws because Velan was not a stockholder of record when such notice was delivered. Progenics therefore notified Velan that Velan did not have the right to nominate any candidates for election to the Progenics Board at the 2019 Progenics Annual Meeting and that the Prior Velan Nominees are not eligible for election to the Progenics Board at the 2019 Progenics Annual Meeting.

At an in-person meeting held on April 23, 2019, the Lantheus Holdings Board reviewed, engaged in a discussion of, and approved, Lantheus Holdings' strategic plan developed and presented by Lantheus Holdings management. Members of Lantheus Holdings management, with the support of external advisors, including a representative of SVB Leerink and an external clinical advisor, presented technical assessments of Progenics' commercial portfolio, including AZEDRA® and other pipeline assets of Progenics, and Progenics' clinical development pipeline. During this discussion, the Lantheus Holdings Board, together with a representative of SVB Leerink, evaluated Progenics generally, its current status as a target of shareholder activism and potential terms of an acquisition of Progenics by Lantheus Holdings.

On April 24, 2019, the Nominating and Corporate Governance Committee of the Progenics Board met with Mr. Venkataraman. At that meeting, Mr. Venkataraman provided a revised proposal to Progenics to replace three

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of the seven members of the Progenics Board with Velan designees in lieu of nominating candidates for election to the Progenics Board at the 2019 Progenics Annual Meeting. Mr. Venkataraman requested a response from Progenics by April 25, 2019.

Also on April 24, 2019, the Lantheus Holdings Board convened a regularly scheduled meeting. At that meeting, members of Lantheus Holdings management provided an assessment and financial projections for a potential all-stock acquisition of Progenics, and following extensive discussion, the Lantheus Holdings Board determined it was advisable to continue exploring a potential acquisition of Progenics, and in connection therewith, authorized and approved the Finance & Strategy Committee of the Lantheus Holdings Board to review, consider and potentially approve a non-binding offer from Lantheus Holdings to acquire Progenics. Lantheus Holdings subsequently engaged White & Case to assist Lantheus Holdings with various legal matters pertaining to a potential acquisition of Progenics. In addition, Lantheus Holdings subsequently retained additional consultants to support its due diligence efforts.

On April 26, 2019, the Progenics Board held a special meeting. Also present was Mr. Fabbio. Mr. Crowley provided an update regarding recent activities with Velan. Mr. Crowley also discussed the potential engagement of Jefferies, relating to the activities of Velan and the Progenics Board's review and consideration of potential strategic transactions, including a potential strategic transaction with Lantheus Holdings or Party A. Following discussion and to assist the Progenics Board as it relates to the Velan matter and the consideration of potential strategic transactions, the Progenics Board approved the engagement of Jefferies on substantially the same terms as were provided to the Progenics Board.

On April 30, 2019, the Progenics Board held a special meeting. Also present was Mr. Fabbio. Mr. Crowley provided an update on recent activities relating to Velan and its notice of director nominations. Mr. Baker then provided an update on activities related to Velan and described a proposed agreement Progenics counsel would present to Velan. The terms of the proposed agreement included, among other things: (i) Velan would agree to a one-year standstill; (ii) two new directors with radiopharma commercialization and supply chain management expertise would be identified by a third-party service provider and added to the Progenics Board; and (iii) each of the two new directors would be considered for serving on the relevant committees of the Progenics Board. Following discussion, the Progenics Board authorized Vinson & Elkins L.L.P., which is referred to in this joint proxy statement/prospectus as V&E, one of Progenics' outside counsels, to deliver the proposed agreement to Velan's counsel.

Also on April 30, 2019, Velan delivered a letter to Progenics, demanding the inspection of certain books, records and documents of Progenics pursuant to Section 220 of the Delaware General Corporation Law, which is referred to in this joint proxy statement/prospectus as the DGCL. The letter stated that Velan was seeking books and records from Progenics to communicate with Progenics stockholders in connection with the election of directors at the 2019 Progenics Annual Meeting and other matters that may properly come before the 2019 Progenics Annual Meeting.

On May 1, 2019, Velan filed Amendment No. 1 to the Schedule 13D to report that, as of April 30, 2019, Velan collectively beneficially owned an aggregate of 7,679,578 shares, constituting approximately 9.1% of Progenics common stock.

On May 3, 2019, V&E delivered Progenics' counter-proposal to Velan's April 24, 2019 proposal to Olshan Frome Wolosky LLP, which is referred to in this joint proxy statement/prospectus as Olshan, Velan's outside counsel. Olshan shortly thereafter informed V&E that Velan would not respond to Progenics' counter-proposal.

On May 7, 2019, Progenics responded to Velan's letter of April 30, 2019 by agreeing to make available certain information requested by Velan.

Between May 7, 2019 and May 30, 2019, Progenics and Velan each filed preliminary proxy statements, amendments thereto, and definitive proxy statements, in each case with respect to the 2019 Progenics Annual

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Meeting and in the case of Velan related to a “withhold the vote” campaign against the re-election of two Progenics directors, Mr. Crowley and Michael D. Kishbauch, at the 2019 Progenics Annual Meeting. During this period and the subsequent period leading up to the 2019 Progenics Annual Meeting, Progenics and Velan each filed various press releases and stockholder letters in connection with the 2019 Progenics Annual Meeting.

On May 13, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O’Melveny, Jefferies and V&E. Representatives of O’Melveny, Jefferies and V&E discussed market practices, fiduciary duties and other legal and financial considerations related to Velan’s “withhold the vote” campaign. Mr. Kishbauch, then a member of the Progenics Board, described the Nominating and Corporate Governance Committee process conducted to evaluate individuals identified by Velan as candidates for election, including in-person interviews and an evaluation of each such nominee’s requisite skills and experience relative to the criteria set forth in the charter of the Nominating and Corporate Governance Committee of the Progenics Board. Mr. Kishbauch and Nicole S. Williams, a member of the Progenics Board, then presented the unanimous recommendation of the Nominating and Corporate Governance Committee of the Progenics Board that each of the then-incumbent members of the Progenics Board, consisting of Messrs. Crowley, Baker, Campbell and Kishbauch, David A. Scheinberg, Dr. Karen J. Ferrante and Ms. Williams, all be nominated by the Progenics Board for re-election to the Progenics Board at the 2019 Progenics Annual Meeting. Following discussion, the Progenics Board approved the nomination to the Progenics Board of the persons nominated by the Nominating and Corporate Governance Committee.

On May 21, 2019, the Finance & Strategy Committee of the Lantheus Holdings Board met with members of Lantheus Holdings management to review preliminary due diligence findings from market research and expert assessments and financial analyses, and to discuss the possibility of making a non-binding offer to acquire Progenics in an all-stock transaction. The Finance & Strategy Committee instructed management to develop a non-binding offer for the acquisition of Progenics.

On May 28, 2019, the Progenics Board held a special meeting. Also present were representatives of management, O’Melveny, Jefferies and V&E. Representatives of O’Melveny, Jefferies and V&E presented to the Progenics Board potential rebuttal responses to Velan’s public statements concerning the upcoming 2019 Progenics Annual Meeting, as well as on the status of the activities and next steps with respect to Velan’s “withhold the vote” campaign. Representatives of Jefferies then discussed potential strategic transactions, including an initial strategic assessment regarding unsolicited interest that had been expressed by Party A to Progenics in March and April 2019 with respect to a potential strategic transaction involving certain assets of Progenics. The Progenics Board then discussed next steps relating to potential strategic transactions and authorized representatives of Jefferies to speak with potential acquirers of Progenics or potential acquirers of certain assets of Progenics, including, without limitation, following up with Party A on Progenics’ prior discussions in March and April 2019 regarding the acquisition of certain assets of Progenics.

Between June 2, 2019 and June 5, 2019, representatives of Jefferies, on behalf of Progenics, contacted representatives of one potential strategic acquirer, which is referred to in this joint proxy statement/prospectus as Party B, regarding its interest in potentially acquiring Progenics or certain assets of Progenics. Party B subsequently declined to pursue a potential acquisition of Progenics or a potential acquisition of certain assets of Progenics, and did not enter into a confidentiality agreement with Progenics. Representatives of Jefferies contacted Party A regarding potentially acquiring certain assets of Progenics. Party A subsequently informed representatives of Jefferies that Party A was not interested in pursuing discussions with Progenics regarding such an acquisition.

On June 5, 2019, representatives of Lantheus Holdings, including Mr. Markison, and representatives of SVB Leerink met with Mr. Baker and representatives of Jefferies. During this meeting, the representatives of Lantheus Holdings expressed their interest in an all-stock acquisition of Progenics at a premium to Progenics’ then-current stock price. Mr. Baker encouraged Lantheus Holdings to conduct initial due diligence and submit a proposal to acquire Progenics.

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On June 7, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and a representative of O'Melveny. Mr. Baker provided an update to the Progenics Board regarding the activities and next steps with respect to Velan's "withhold the vote" campaign. Mr. Baker then reported to the Progenics Board on the June 5, 2019 meeting between representatives of Lantheus Holdings, representatives of SVB Leerink, himself and representatives of Jefferies.

On June 13, 2019, V&E contacted Olshan and proposed a settlement between Progenics and Velan. Progenics' proposal included, among other things that: (i) Velan would agree to a two-year standstill; (ii) two independent directors with relevant expertise, including, among others, public company board experience, oncology and pharmaceutical experience, financial expertise and development and commercial expertise, and who did not present environmental-social-and-governance concerns, would be added to the Progenics Board, with those directors being automatically re-nominated at the 2020 annual meeting of the Progenics stockholders; and (iii) none of the incumbent Progenics directors would be required to resign.

During the week of June 17, 2019, representatives of Lantheus Holdings conducted preliminary due diligence telephone calls with Progenics management.

On June 20, 2019, the Finance & Strategy Committee of the Lantheus Holdings Board met and reviewed an updated financial analysis of a potential Progenics acquisition with members of Lantheus Holdings management and representatives of SVB Leerink. The Finance & Strategy Committee thereafter recommended discussing a proposed non-binding offer to acquire Progenics with the full Lantheus Holdings Board at its upcoming special meeting.

On June 21, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and a representative of O'Melveny. Mr. Baker provided an update to the Progenics Board regarding the activities and next steps with respect to Velan's "withhold the vote" campaign.

Also on June 21, 2019, the Lantheus Holdings Board convened a special meeting telephonically to consider an offer for Progenics. Members of Lantheus Holdings management updated the Lantheus Holdings Board on recent interactions with the Progenics management team and presented a strategic and financial analysis of a proposed non-binding offer. A representative of SVB Leerink advised on the rationale for the transaction, and a representative of White & Case advised the Lantheus Holdings Board with respect to its fiduciary duties in connection with its decision concerning a proposed acquisition of Progenics. The Lantheus Holdings Board unanimously approved a non-binding offer to acquire Progenics in an all-stock transaction that would result in Progenics stockholders holding a pro forma fully diluted ownership of the combined company of approximately 34.5%.

Later on June 21, 2019, Lantheus Holdings submitted to Progenics a written, non-binding proposal to acquire Progenics in an all-stock transaction on the terms the Lantheus Holdings Board approved that would result in Progenics stockholders holding pro forma fully diluted ownership of the combined company of approximately 34.5%. This proposal is referred to in this joint proxy statement/prospectus as the June 21 Proposal. The June 21 Proposal implied an exchange ratio of 0.2477 of a share of Lantheus Holdings common stock for each share of Progenics common stock and represented a premium of 52.2% to the then 30-day volume weighted average share price of Progenics common stock. The June 21 Proposal was subject to satisfactory completion of due diligence, the negotiation of a mutually acceptable definitive agreement, the approval by the Lantheus Holdings Board and the approval by stockholders of both companies. Lantheus Holdings stated in the June 21 Proposal that it was prepared to conduct due diligence in a period of approximately six weeks and would enable Progenics to engage in reverse due diligence during that period. Lantheus Holdings also requested an exclusivity period of six weeks.

On June 24, 2019, at Jefferies' request, representatives of Jefferies discussed with representatives of SVB Leerink certain aspects of Lantheus Holdings' June 21 Proposal including the status of Lantheus Holdings' due diligence process.

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On June 25, 2019, Olshan delivered to V&E Velan’s counter-proposal to Progenics’ June 13, 2019 settlement proposal under which, among other things: (i) Velan would agree to a one-year standstill; (ii) two independent directors with the appropriate expertise and who did not present environmental-social-and-governance concerns would be added to the Progenics Board; and (iii) one incumbent director would resign.

On June 26, 2019, V&E delivered to Olshan Progenics’ response to Velan’s June 25, 2019 settlement proposal. Progenics proposed that, among other things: (i) Velan would agree to a one-year standstill; (ii) two independent directors identified by Velan with appropriate experience and who did not present environmental-social-and-governance concerns would be added to the Progenics Board; (iii) each of the two new directors would be considered for serving on the relevant committees of the Progenics Board; (iv) the Progenics Board would form a new commercialization committee to which it would appoint one of the new directors; (v) one incumbent director would agree not to stand for re-election at the 2020 annual meeting of the Progenics stockholders; and (vi) the size of the Progenics Board would be fixed at eight through the 2020 annual meeting of the Progenics stockholders.

Later on that day, Olshan conveyed to V&E that Velan was willing to accept Progenics’ latest settlement proposal subject to two conditions: (i) Progenics agreement to elect a new board chair for the Progenics Board, and (ii) Velan’s right to designate two board observers to attend the Progenics Board meetings.

On June 27, 2019, V&E informed Olshan that Progenics could not agree to Velan’s proposal to add two observers to the Progenics Board. Later that day, Olshan informed V&E that Velan declined Progenics’ settlement proposal.

On June 27, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O’Melveny and Jefferies. Mr. Baker provided an update to the Progenics Board regarding the activities and next steps with respect to Velan’s “withhold the vote” campaign. The Progenics Board then evaluated and discussed Lantheus Holdings’ June 21 Proposal, and Jefferies reviewed the financial aspects of the June 21 Proposal, including Progenics financial projections prepared by Progenics management and Lantheus Holdings financial projections based on Wall Street research and estimates. Following discussion, the Progenics Board authorized Jefferies to respond to Lantheus Holdings to ask that Lantheus Holdings increase the value offered in the June 21 Proposal, but also make clear that the Progenics Board would support Lantheus Holdings conducting further due diligence under a confidentiality agreement. The Progenics Board then reviewed certain relationship information provided by Jefferies. See “—Opinion of Progenics’ Financial Advisor” beginning on page 129 of this joint proxy statement/prospectus. In addition, the Progenics Board approved a market check involving Jefferies’ outreach to five potential strategic acquirers (none of which were Party A or Party B) discussed at such meeting based on, among other things, the likelihood of potential interest in acquiring Progenics and such potential acquirers’ presence in the prostate cancer or radiopharmaceutical industry.

On June 27, 2019, representatives of Jefferies communicated to representatives of SVB Leerink that the Progenics Board supported Lantheus Holdings conducting further due diligence under a confidentiality agreement, but required that the value offered by Lantheus Holdings in the June 21 Proposal be increased.

On June 27, 2019, Progenics and Lantheus Holdings began negotiating a new confidentiality agreement, which was executed on July 15, 2019, that included a mutual standstill provision that would automatically terminate (i) as it restricted Lantheus Holdings, upon Progenics’ entry into a merger agreement with a third party and (ii) as it restricted Progenics, upon Lantheus Holdings’ entry into a merger agreement with a third party.

Between June 30, 2019 and July 8, 2019, representatives of Jefferies, at the Progenics Board’s instruction, contacted representatives of five potential strategic acquirers regarding potentially acquiring Progenics (none of which were Party A or Party B). By July 17, 2019, all such potential strategic acquirers had declined to pursue the opportunity to bid to acquire Progenics, except that one potential strategic acquirer expressed interest in potentially acquiring a specific development program of Progenics. None of those potential strategic acquirers entered into a confidentiality agreement with Progenics.

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On July 2, 2019, the Progenics Board held a special meeting. Also present was Mr. Fabbio. Mr. Baker provided an update to the Progenics Board regarding the activities and next steps concerning Velan's "withhold the vote" campaign. Mr. Baker then provided the Progenics Board with an update regarding ongoing investor meetings and initial, preliminary voting results relating to the upcoming 2019 Progenics Annual Meeting. Mr. Baker then provided an update on discussions with Lantheus Holdings regarding a potential acquisition of Progenics by Lantheus Holdings, initial feedback Jefferies received from other potential strategic acquirers regarding a potential acquisition of Progenics and next steps regarding Progenics entering into a confidentiality agreement with Lantheus Holdings and other due diligence matters relating thereto.

On July 9, 2019, the Progenics Board held a special meeting. Also present was Mr. Fabbio. Mr. Baker provided the Progenics Board with an update regarding the activities relating to Velan's "withhold the vote" campaign and steps to prepare for possible external communications after the 2019 Progenics Annual Meeting. Mr. Fabbio presented to the Progenics Board terms of an engagement letter negotiated with Jefferies for Jefferies to serve as financial advisor relating to a potential strategic transaction involving Progenics. Following discussion, the Progenics Board approved entry into the engagement letter.

Later on July 9, 2019, Progenics executed an engagement letter for Jefferies to serve as Progenics' financial advisor in connection with Progenics' evaluation, consideration and negotiation of a strategic transaction relating to the process authorized by the Progenics Board on June 27, 2019.

On July 11, 2019, Progenics held the 2019 Progenics Annual Meeting. At the 2019 Progenics Annual Meeting, each of Messrs. Crowley and Kishbauch did not receive a majority of the votes cast. In accordance with Progenics' by-laws, Messrs. Crowley and Kishbauch each submitted a contingent resignation to the Progenics Board.

Also on July 11, 2019, the Progenics Board held a special meeting. Also present were representatives of management, O'Melveny, Jefferies and V&E. The Progenics Board, together with representatives of O'Melveny, Jefferies and V&E, discussed preliminary voting results of the 2019 Progenics Annual Meeting and the process and timeline for the consideration of contingent resignations submitted by Messrs. Crowley and Kishbauch in light of the preliminary voting results for the election of Progenics directors.

On July 12, 2019, Progenics issued a press release announcing the preliminary voting results of the 2019 Progenics Annual Meeting, which noted that Messrs. Baker, Campbell and Scheinberg, Dr. Ferrante and Ms. Williams received a majority of the votes cast at the 2019 Progenics Annual Meeting, and Messrs. Crowley and Kishbauch did not.

On July 15, 2019, Mr. Baker and Mr. Campbell participated in a call with representatives of Velan in which the results of the 2019 Progenics Annual Meeting were discussed.

On July 16, 2019, representatives of Lantheus Holdings and its advisors were provided access to an electronic data room populated with information about Progenics for due diligence purposes. Thereafter until the merger agreement's execution on October 1, 2019, Lantheus Holdings and its advisors participated in numerous in-person and telephonic due diligence sessions with Progenics and its advisors.

At an in-person meeting of the Lantheus Holdings Board on July 17, 2019, Lantheus Holdings management reviewed an updated, detailed analysis of the potential Progenics transaction. Following the review, the Lantheus Holdings Board discussed with members of Lantheus Holdings management areas on which due diligence should initially be focused, including site activation, patient treatment pathways and manufacturing and supply chain.

On July 18, 2019, at its regular in-person meeting, members of the Finance & Strategy Committee of the Lantheus Holdings Board discussed with members of Lantheus Holdings management integration issues and certain financial aspects of the proposed acquisition of Progenics, including dilution to Lantheus Holdings

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stockholders, and valuation and premium ranges for Progenics. Later on July 18, 2019, the full Lantheus Holdings Board discussed at its regular in-person meeting various potential business development opportunities, including the proposed acquisition of Progenics. The Lantheus Holdings Board and management discussed due diligence matters, including Progenics' commercial portfolio, such as AZEDRA® and other pipeline assets of Progenics and the most efficient way to conduct due diligence.

On July 19, 2019, the Progenics Board held a special meeting. Also present was Mr. Fabbio. Mr. Baker provided the Progenics Board with an update regarding Progenics' review of strategic transactions, including the lack of interest from the potential strategic acquirers approached by Jefferies at Progenics Board's request. Representatives of Jefferies advised that one potential strategic acquirer was potentially interested in acquiring a specific development program of Progenics, but, after discussion, the Progenics Board declined to pursue this transaction in favor of continuing to pursue the potential acquisition of Progenics by Lantheus Holdings. Mr. Baker then discussed the recent execution of the confidentiality agreement with Lantheus Holdings and the commencement of the due diligence process with Lantheus Holdings.

Also on July 19, 2019, the independent inspector of election for the 2019 Progenics Annual Meeting delivered its final report to Progenics. The report confirmed that all the Progenics nominees for the Progenics Board other than Messrs. Crowley and Kishbauch, received a majority of the votes cast. The report also indicated that the Progenics stockholders approved, on an advisory basis, the compensation of Progenics' named executive officers.

On July 25, 2019, the Progenics Board held a special meeting. Also present was Mr. Fabbio. Mr. Baker provided the Progenics Board with an update regarding discussions with Lantheus Holdings relating to the due diligence process and the forthcoming due diligence calls scheduled for the week of July 29, 2019.

On July 26, 2019, Olshan contacted V&E to present a new settlement proposal. Under the new proposal, among other things: (i) the Progenics Board would accept the resignations of Messrs. Crowley and Kishbauch; (ii) Velan would have the right to designate two directors to the Progenics Board, and Progenics and Velan would jointly designate a third director; (iii) Progenics would adopt stock ownership guidelines for directors; and (iv) Velan would agree to a standstill lasting until 30 days before the opening of the nomination window for the 2020 annual meeting of the Progenics stockholders.

On July 30, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and a representative of O'Melveny. The representative of O'Melveny reviewed for the Progenics Board its fiduciary duties under Delaware law. Mr. Baker then described the recent settlement offer from Velan. Following discussion, the Progenics Board agreed that it would consider a reasonable and appropriate response to the settlement offer from Velan. Mr. Baker then provided the Progenics Board with an update regarding discussions with Lantheus Holdings and that due diligence continued to progress with several teleconferences scheduled for the coming days to discuss, among other items, clinical, commercial and manufacturing issues related to Progenics' products and product pipeline.

On July 31, 2019, representatives of Progenics and its advisors were provided access to an electronic data room populated with information about Lantheus Holdings for purposes of performing reverse due diligence on Lantheus Holdings.

On August 6, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and a representative of O'Melveny. Mr. Baker provided the Progenics Board with an update regarding discussions with Lantheus Holdings and noted that due diligence was progressing and that Lantheus Holdings was scheduled for a site visit of the manufacturing facility for AZEDRA®. The Progenics Board then discussed the status of the potential acquisition of Progenics by Lantheus Holdings, including posing questions to Mr. Baker regarding the status and timing of the due diligence process with Lantheus Holdings.

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On August 7, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and a representative of O'Melveny. The Progenics Board discussed the certified voting results of the 2019 Progenics Annual Meeting. The Nominating and Corporate Governance Committee of the Progenics Board recommended that the contingent resignations of Messrs. Crowley and Kishbauch be accepted. Following discussion, the Progenics Board accepted the contingent resignations of Messrs. Crowley and Kishbauch, with an effective date of October 17, 2019, 90 days following the certification of the voting results for the 2019 Progenics Annual Meeting. The resignations could also take effect sooner if the Progenics Board determined the responsibilities of Messrs. Crowley and Kishbauch had been sufficiently transitioned to the remaining Progenics directors, but such transition of responsibilities did not occur earlier than October 17, 2019.

On August 8, 2019, Progenics announced the Progenics Board's acceptance of the resignations of Messrs. Crowley and Kishbauch, the reconstitution of the Progenics Board committees, certain amendments to committee charters and, in consultation with Frederic W. Cook & Co., the adoption of stock ownership guidelines for non-employee directors and executive officers. Progenics also announced that the members of the newly reconstituted Nominating and Corporate Governance Committee of the Progenics Board would reach out to stockholders to solicit feedback regarding stockholder value creation. Progenics' announcement also welcomed stockholder input on new candidates for the Progenics Board.

On August 9, 2019, representatives of Lantheus Holdings' manufacturing and quality teams conducted a site visit at Progenics' manufacturing facility for AZEDRA® in Somerset, New Jersey as part of Lantheus Holdings' due diligence on AZEDRA®.

On August 11, 2019, a representative of Jefferies contacted a representative of SVB Leerink to request that Lantheus Holdings submit a revised non-binding indication of interest prior to continuing in-depth due diligence.

On August 12, 2019, Velan issued a press release in response to Progenics' Q2 2019 financial results, noting its intention to take action on behalf of all stockholders, including by seeking to remove and replace members of the Progenics Board.

On August 14, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and Jefferies. Mr. Baker provided the Progenics Board with an update regarding discussions with Lantheus Holdings and noted that due diligence was progressing and that the AZEDRA® manufacturing facility site visit by Lantheus Holdings had been completed. The Progenics Board then discussed matters relating to the potential acquisition of Progenics by Lantheus Holdings, including the potential timing of such a transaction. The Progenics Board also discussed Velan's August 12, 2019 press release and potential terms of a counter offer to Velan's most recent settlement offer of July 26, 2019. Following discussion, the Progenics Board requested additional information regarding the terms of a proposed settlement with Velan and determined to consider a potential counter offer further during the next meeting of the Progenics Board.

Also on August 14, 2019, Mr. Venkataraman told a representative of SVB Leerink that Mr. Venkataraman knew that SVB Leerink was advising Lantheus Holdings with respect to a potential transaction with Progenics and that Mr. Venkataraman was opposed to any such proposed transaction, notwithstanding that deal terms had not been finalized or announced as of that time. On a conference call with members of Lantheus Holdings management, representatives of SVB Leerink notified members of Lantheus Holdings management of this discussion, and summarized in general terms SVB Leerink's historical and ongoing relationship with Mr. Venkataraman and his affiliated businesses.

Between August 14, 2019 and September 9, 2019, the Velan Group actively traded in Progenics common stock. During this period, the Velan Group purchased an aggregate of 1,555,991 shares of Progenics common stock for a total purchase price of approximately \$6.8 million and amounting to 1.80% of Progenics' outstanding shares of common stock. The number of shares bought and the aggregate purchase price are based on the Velan Group's public filings.

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On August 16, 2019, the Finance & Strategy Committee of the Lantheus Holdings Board held a telephonic conference call with members of Lantheus Holdings management and representatives of SVB Leerink and White & Case, to discuss certain due diligence findings, including Progenics' commercial portfolio, such as AZEDRA® and other pipeline assets of Progenics, an updated financial analysis of Progenics and the impact on Lantheus Holdings of acquiring Progenics.

On August 19, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and Jefferies. Mr. Baker provided an update regarding the potential acquisition of Progenics by Lantheus Holdings. The Progenics Board discussed reverse due diligence to be conducted by Progenics and its advisors on Lantheus Holdings, valuation considerations relating to Progenics and Lantheus Holdings, the process for a transaction with Lantheus Holdings and other similar considerations relating to a potential acquisition of Progenics by Lantheus Holdings. The Progenics Board then discussed the status of communications and engagement with Velan and potential alternatives for a settlement with Velan. The Progenics Board then agreed that Mr. Baker would further engage with Progenics' advisors to prepare a framework for a potential settlement with Velan.

On August 19, 2019, the Lantheus Holdings Board convened a special meeting telephonically, during which it reviewed the current status of the proposed acquisition of Progenics with members of Lantheus Holdings management and representatives of SVB Leerink and White & Case, including an updated financial analysis and certain due diligence findings by management of Lantheus Holdings and its advisors relating to, among other things, Progenics' commercial portfolio, such as AZEDRA® and other pipeline assets of Progenics. Based in part on these updated findings, the Lantheus Holdings Board authorized management to present to Progenics a revised non-binding offer that would result in Progenics stockholders holding approximately 34.8% pro forma ownership on a fully diluted basis of the combined company implying an exchange ratio of 0.2520 of a share of Lantheus Holdings common stock for each share of Progenics common stock. This proposal represented a reduction of approximately \$0.95 per share compared to the previous offer and a 60.8% premium to the one-day prior share price of Progenics common stock.

Later on August 19, 2019, Lantheus Holdings provided a revised and updated non-binding offer letter to Progenics in which it proposed acquiring Progenics in an all-stock transaction that would result in Progenics stockholders holding pro forma fully diluted ownership in the combined company of approximately 34.8%, implying an exchange ratio of 0.2520 of a share of Lantheus Holdings common stock for each outstanding share of Progenics common stock, which is referred to in this joint proxy statement/prospectus as the August 19 Proposal. Lantheus Holdings also requested an exclusivity agreement in connection with the August 19 Proposal.

On August 22, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and Jefferies. Representatives of Jefferies, at the request of the Progenics Board, reviewed the terms of the August 19 Proposal. The Progenics Board, together with representatives of Jefferies, discussed the August 19 Proposal and preliminary financial analysis relating to the valuations of Progenics and Lantheus Holdings, the implied premium presented in the August 19 Proposal, the request for exclusivity by Lantheus Holdings and the likely interests of the Progenics stockholders in certain Progenics directors serving as members of the Lantheus Holdings Board upon the closing of the merger. The Progenics Board also discussed the market check previously conducted by Jefferies, which did not result in any other potential strategic acquirers pursuing a potential acquisition of Progenics. Following discussion, the Progenics Board determined that it would be advisable and in the best interests of Progenics and its stockholders (i) to continue discussions with Lantheus Holdings based on a higher valuation of Progenics than as provided in the August 19 Proposal, (ii) to have continued representation of Progenics directors on the Lantheus Holdings Board upon the closing of the merger, and (iii) that a reasonable period of exclusivity could be acceptable in light of the market check results if Lantheus Holdings agreed to a higher valuation of Progenics. The Progenics Board approved further engagement with Lantheus Holdings based on a counter proposal providing Progenics stockholders with 36.5% of the pro forma fully diluted ownership of the combined company, the continuing service of two Progenics directors on the Lantheus Holdings Board upon the closing of the merger and a reasonable period of exclusivity if Lantheus Holdings agreed to such higher valuation of Progenics.

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Later on August 22, 2019, a representative of Jefferies, on behalf of Progenics, communicated a counterproposal to representatives of SVB Leerink, which provided that Lantheus Holdings would acquire Progenics in an all-stock transaction that would result in Progenics stockholders holding pro forma fully diluted ownership in the combined company of 36.5% and that upon the merger's consummation the Lantheus Holdings Board would appoint two Progenics directors to the Lantheus Holdings Board. Representatives of Jefferies further communicated to representatives of SVB Leerink that if Lantheus Holdings agreed to the higher valuation, the Progenics Board would agree to a reasonable exclusivity period.

On August 23, 2019, the Lantheus Holdings Board convened a special meeting telephonically. Members of Lantheus Holdings management and representatives of SVB Leerink and White & Case were also present. During this meeting, the Lantheus Holdings Board discussed the Progenics counterproposal conveyed to SVB Leerink and Lantheus Holdings management's updated financial analysis. Representatives of SVB Leerink also reviewed with the Lantheus Holdings Board its financial analysis and a representative of White & Case reviewed with the Lantheus Holdings Board the directors' fiduciary duties. After discussion among the members of the Lantheus Holdings Board, management and their advisors, the Lantheus Holdings Board approved a revised proposal which would result in Progenics stockholders holding pro forma ownership in the combined company of approximately 36.5%, which represented an implied exchange ratio of 0.2716 of a share of Lantheus Holdings common stock for each share of Progenics common stock. The Lantheus Holdings Board also determined that it would not guarantee the appointment of any Progenics directors to the Lantheus Holdings Board, but would agree to interview Progenics directors to potentially serve as members of the Lantheus Holdings Board following the closing of the merger. The Lantheus Holdings Board also authorized the retention of third party advisors to help facilitate the due diligence and integration planning processes.

On August 23, 2019, representatives of SVB Leerink, on behalf of Lantheus Holdings, communicated to representatives of Jefferies the revised Lantheus Holdings proposal and provided a draft exclusivity agreement at the same time.

On August 24, 2019, a representative of Jefferies, on behalf of the Progenics Board and based on instruction provided by the Progenics Board on August 22, 2019, informed a representative of SVB Leerink that Progenics would move forward with an exclusivity agreement based on Progenics stockholders holding 36.5% pro forma fully diluted ownership of the combined company.

On August 26, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and a representative of O'Melveny. Mr. Crowley reported to the Progenics Board that Lantheus Holdings had agreed to the higher valuation, under which Progenics stockholders would own 36.5% of the pro forma fully diluted ownership of the combined company, that Lantheus Holdings had agreed to interview Progenics directors with a view to including at least up to two Progenics directors on the Lantheus Holdings Board upon the closing of the merger and that in light of Lantheus Holdings' agreement to the higher valuation, Progenics and Lantheus Holdings would, subject to Progenics Board approval, agree to approximately four weeks of exclusivity with a potential one-week extension of such exclusivity. The Progenics Board then discussed a preliminary financial analysis regarding Lantheus Holdings' contemplated acquisition of Progenics, the terms of the proposed transaction offered by Lantheus Holdings, the proposed terms of the exclusivity agreement and the timing and process of the potential acquisition of Progenics by Lantheus Holdings. The Progenics Board further confirmed that there had been no further updates regarding the market check conducted by representatives of Jefferies at the Progenics Board's prior instruction. Following discussion, the Progenics Board determined that it would be advisable and in the best interests of Progenics and its stockholders for Progenics to enter into an exclusivity agreement with Lantheus Holdings as proposed to conduct further negotiations and appropriate reverse due diligence on Lantheus Holdings. The Progenics Board then approved Progenics' entry into such exclusivity agreement.

Later on August 26, 2019, Progenics and Lantheus Holdings entered into an exclusivity agreement, which granted Lantheus Holdings exclusive negotiation rights with respect to the acquisition of Progenics through September 23, 2019, subject to a potential one-week extension of such exclusivity period.

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Also on August 26, 2019, Velan delivered a letter to the Progenics Board notifying the Progenics Board of Velan's plan to file a Schedule 13D amendment and intention to file a consent solicitation. Following its delivery of this letter, Velan filed Amendment No. 2 to Schedule 13D with the SEC, reporting that as of August 26, 2019, Velan collectively beneficially owned an aggregate of 9,453,672 shares of Progenics common stock, constituting approximately 10.9% of Progenics common stock outstanding. The amended Schedule 13D also disclosed Velan's intention to reconstitute the Progenics Board through a consent solicitation.

On August 27, 2019, Messrs. Baker and Campbell delivered a letter to Velan, explaining Progenics' ongoing stockholder outreach effort in response to Velan's August 26, 2019 letter to Progenics. Messrs. Baker and Campbell noted the Progenics Board's implementation of a number of governance enhancements. They also stated that the Progenics Board was engaging with stockholders methodically to hear their views regarding board composition, Progenics' governance practices and paths to stockholder value creation, more generally.

On the evening of August 27, 2019, representatives of Jefferies and representatives of SVB Leerink spoke by telephone, during which representatives of Jefferies summarized Progenics' interactions with Velan to date.

On August 29, 2019, Lantheus Holdings engaged a consulting firm to assist Lantheus Holdings management with additional due diligence activities on commercial and clinical matters.

On September 1, 2019, Mr. Baker and Ms. Heino met in-person and discussed the potential acquisition of Progenics by Lantheus Holdings, including the process and areas of focus for Lantheus Holdings' remaining due diligence on Progenics and Progenics' remaining reverse due diligence on Lantheus Holdings as well as timing and process for the potential acquisition of Progenics by Lantheus Holdings.

On September 3, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and a representative of O'Melveny. Mr. Baker provided an update regarding negotiations with Lantheus Holdings, including a meeting between Mr. Baker and Ms. Heino in which Mr. Baker and Ms. Heino discussed, among other things, the process and areas of focus for Lantheus Holdings' remaining due diligence on Progenics and Progenics' remaining reverse due diligence on Lantheus Holdings as well as timing and process for the potential acquisition of Progenics by Lantheus Holdings. Mr. Baker then discussed the areas of focus for Progenics' remaining due diligence on Lantheus Holdings, the status of negotiations and an anticipated timeline for entering into the merger agreement if approved by the Progenics Board and the Lantheus Holdings Board. The Progenics Board then discussed the process proposed by Lantheus Holdings for interviewing Progenics directors in considering the continued services of certain Progenics directors on the Lantheus Holdings Board upon the closing of the merger. Following discussion, the Progenics Board agreed to proceed with the proposed process in light of the Progenics Board's determination that it would be in the best interests of Progenics and its stockholders for certain Progenics directors to serve on the Lantheus Holdings Board upon the closing of the merger. Mr. Baker then discussed a potential framework and alternatives for continued settlement discussions with Velan. Following discussion by the Progenics Board, taking into account discussions with Progenics' advisors and feedback from Progenics stockholders in support of reaching a settlement with Velan, the Progenics Board agreed to make a counter proposal to Velan's latest settlement offer of July 26, 2019 and authorized Mr. Baker to instruct Progenics' counsel to communicate a counterproposal to Velan's counsel.

Between September 4, 2019 and October 1, 2019, representatives of Lantheus Holdings, Progenics and their respective advisors held multiple meetings and conference calls regarding remaining due diligence matters relating to Lantheus Holdings and remaining due diligence matters relating to Progenics. During this period, Lantheus Holdings also conducted interviews of the Progenics directors in connection with one or more Progenics directors potentially serving on the Lantheus Holdings Board following the closing of the merger.

On September 4, 2019, members of Progenics management and representatives of Jefferies met with members of Lantheus Holdings and representatives of SVB Leerink in Boston to conduct an in-depth due diligence on Lantheus Holdings.

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On September 5, 2019, representatives of White & Case, delivered to representatives of O'Melveny a draft of the merger agreement. The draft merger agreement included, among other things, (i) a no-solicitation provision applicable to Progenics, but not a reciprocal provision applicable to Lantheus Holdings, (ii) a provision allowing Progenics to change its recommendation to the Progenics stockholders in favor of the adoption of the merger agreement in response to a superior proposal, but Progenics would not be able to unilaterally terminate the merger agreement in such circumstance, (iii) a provision allowing the Lantheus Holdings Board to change its recommendation to the Lantheus Holdings stockholders in favor of the share issuance proposal if the failure to do so would be inconsistent with the fiduciary duties of the Lantheus Holdings Board, (iv) a provision requiring Progenics to pay a termination fee (the amount of which was not specified) if, among other situations, Lantheus Holdings terminated the merger agreement as a result of the Progenics Board changing its recommendation to the Progenics stockholders in favor of adoption of the merger agreement, (v) a provision requiring Progenics to pay a termination fee (the amount of which was not specified) if Lantheus Holdings terminated the merger agreement as a result of any breach of any no solicitation provision of the merger agreement by Progenics, (vi) a provision requiring Lantheus Holdings to pay a termination fee (the amount of which was not specified) if Progenics terminated the merger agreement as a result of the Lantheus Holdings Board changing its recommendation to the Lantheus Holdings stockholders in favor of the share issuance proposal, (vii) a provision requiring Progenics to reimburse the expenses of Lantheus Holdings if either Progenics or Lantheus Holdings terminated the merger agreement as a result of the failure of the Progenics stockholders to approve the merger proposal, with such expenses capped at the amount of the Progenics termination fee and (viii) a provision allowing Lantheus Holdings to terminate the merger agreement and obligating Progenics to pay a termination fee 200 basis points higher than the Progenics termination fee (the amount of which was not specified at the time) as a result of a willful and material breach by Progenics of any covenants or other agreements in the merger agreement.

On September 6, 2019, Progenics delivered a letter to Velan, which offered to appoint one new independent director designated by Velan, one new director selected by Velan from a pool of candidates identified by Progenics and a third director selected by the newly reconstituted Progenics Board, as well as to appoint a new chair of the Progenics Board once the Progenics Board is reconstituted with at least six directors agreeing to the appointment. Progenics' proposal also included a standstill provision that would remain in effect until the day following the 2020 annual meeting of the Progenics stockholders.

On September 8, 2019, Velan delivered a letter to the Progenics Board outlining its latest settlement proposals.

On September 9, 2019, members of Lantheus Holdings and representatives of SVB Leerink met with members of Progenics management and representatives of Jefferies in New York City to conduct in-depth due diligence on Progenics.

On September 11, 2019, the Progenics Board held a regular meeting. Also present were Mr. Fabbio and representatives of O'Melveny, V&E and Jefferies. Representatives of Jefferies provided an update regarding negotiations and discussions with Lantheus Holdings in connection with the potential acquisition of Progenics by Lantheus Holdings. Representatives of Jefferies also reviewed with the Progenics Board a preliminary financial analysis relating to the potential acquisition of Progenics by Lantheus Holdings as well as the status of due diligence efforts by Progenics and Lantheus Holdings. A representative of O'Melveny provided the Progenics Board with a summary of certain material terms in the draft merger agreement and proposed responses to such material provisions. A representative of V&E then provided an update regarding settlement discussions with Velan. The Progenics Board, together with a representative of V&E, also discussed the potential delivery of a settlement offer to Velan, which would offer to appoint two new independent directors designated by Velan and a third independent director mutually selected by Progenics and Velan from the pool of candidates identified by a third party service provider, as well as to appoint a new chair of the Progenics Board once the Progenics Board is reconstituted with at least six out of the seven directors agreeing to the appointment. The Progenics Board also discussed including a standstill provision that would remain in effect until the day following the 2020 annual meeting of the Progenics stockholders. Following such discussion, the Progenics Board determined that it was in the best interests of Progenics and its stockholders to deliver such settlement offer to Velan and authorized the delivery of such settlement offer.

Also on September 11, 2019, representatives of O'Melveny delivered to representatives of White & Case a revised draft of the merger agreement. Among other things, the revised draft of the merger agreement (i) included a reciprocal non-solicitation provision applicable to Lantheus Holdings, (ii) included a provision that would permit Progenics to terminate the merger agreement to enter into a transaction providing for a superior proposal, (iii) did not specify the amount of the termination fees that may be payable by either Progenics or Lantheus Holdings under the merger agreement, (iv) included a provision allowing the Lantheus Holdings Board to change its recommendation to the Lantheus Holdings stockholders in favor of the share issuance proposal only in connection with a Lantheus Holdings superior proposal or a Lantheus Holdings intervening event, (v) deleted the provision requiring Progenics to pay a termination fee if Lantheus Holdings terminated the merger agreement as a result of any breach of any non-solicitation provision of the merger agreement by Progenics, (vi) deleted the Lantheus Holdings expense reimbursement provision, (vii) deleted the provision allowing Lantheus Holdings to terminate the merger agreement and obligating Progenics to pay a termination fee 200 basis points higher than the Progenics termination fee as a result of a willful and material breach by Progenics of any covenants or other agreements in the merger agreement and (viii) excluded from the definition of "material adverse effect" any adverse development or events with respect to any of Progenics' existing or pipeline products (while the definition of Progenics "intervening event" was broadened by the deletion of carve-outs relating to Progenics' existing or pipeline products).

Also on September 11, 2019, Progenics delivered a letter to Velan, which offered to appoint two new independent directors designated by Velan and a third independent director mutually selected by Progenics and Velan from the pool of candidates identified by a third party service provider, as well as to appoint a new chair of the Progenics Board once the Progenics Board is reconstituted with at least six out of the seven directors agreeing to the appointment. Progenics' proposal also included a standstill provision that would remain in effect until the day following the 2020 annual meeting of the Progenics stockholders.

On September 12, 2019, at a telephonic meeting of the Lantheus Holdings Board at which representatives of SVB Leerink and White & Case were present, members of Lantheus Holdings management outlined a potential timeline for signing, announcing and closing the proposed acquisition of Progenics. Representatives of White & Case discussed certain process issues and members of Lantheus Holdings management provided an updated due diligence report. The Lantheus Holdings Board and its advisors then discussed certain financial and strategic aspects of the proposed transaction, including updates on Progenics' commercial and clinical portfolio, such as AZEDRA® commercialization, manufacturing and related issues.

On September 16, 2019, Velan delivered a letter to the Progenics Board, requesting, among other things, the retirement or resignation of Mr. Baker.

On September 16, 2019, members of Lantheus Holdings management and representatives of SVB Leerink met to review recent operating expense information provided by Progenics.

On September 17, 2019, representatives of White & Case delivered to representatives of O'Melveny a revised draft of the merger agreement. In the revised draft of the merger agreement, Lantheus Holdings (i) agreed to the reciprocal no-solicitation provision applicable to Lantheus Holdings, (ii) rejected the provision that would permit Progenics to terminate the merger agreement to enter into a transaction providing for a superior proposal, (iii) did not specify the amount of the termination fees that may be payable by either Progenics or Lantheus Holdings under the merger agreement, (iv) agreed to the provision allowing the Lantheus Holdings Board to change its recommendation to the Lantheus Holdings stockholders in favor of the share issuance proposal only in connection with a Lantheus Holdings superior proposal or a Lantheus Holdings intervening event, (v) reinserted the provision requiring Progenics to pay a termination fee if Lantheus Holdings terminated the merger agreement as a result of any breach of any non-solicitation provision of the merger agreement by Progenics, (vi) reinserted the Lantheus Holdings expense reimbursement provision (subject to the same cap as provided in Lantheus Holdings' initial draft of the merger agreement), (vii) reinserted the provision allowing Lantheus Holdings to terminate the merger agreement and obligating Progenics to pay a termination fee 200 basis points higher than

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the Progenics termination fee as a result of a willful and material breach by Progenics of any covenants or other agreements in the merger agreement and (viii) deleted the exclusion to the definition of “material adverse effect” for any adverse development or events with respect to any of Progenics’ existing or pipeline products (and narrowed the definition of “intervening event” by re-inserting carve-outs relating to Progenics’ existing or pipeline products).

On September 17, 2019, members of Lantheus Holdings management and its advisors discussed due diligence findings to date, including in-depth market research on AZEDRA® and Progenics’ prostate cancer programs, a review of commercial activities and customer analytics, market and product-specific forecasts, a detailed review of clinical development programs and plans, regulatory interactions and clinical data, projected future investments required to seek regulatory approval and differentiate products within the market, a review of market outlook for RELISTOR®, intellectual property matters and third party collaborations and licenses, projected financial information and potential financial synergies, tax implications, leases, key contracts and business operations, quality systems and processes, technology systems and processes, and options to increase manufacturing capacity and associated costs.

On September 18, 2019, Velan filed a preliminary consent solicitation statement on Schedule 14A with the SEC to, among other things, solicit written consents from Progenics stockholders to remove three duly elected members of the Progenics Board and fill those board seats, as well as the seats to be vacated by Messrs. Crowley and Kishbauch, with certain Velan nominees, who are referred to in this joint proxy statement/prospectus as the Velan Nominees. Velan’s preliminary consent solicitation disclosed that Velan collectively beneficially owned an aggregate of 10,161,733 shares of Progenics common stock, constituting approximately 11.8% of the shares of Progenics common stock outstanding.

Also on September 18, 2019, Velan delivered to Progenics’ Secretary written notice of the proposals Velan included in its consent solicitation, which are referred to in this joint proxy statement/prospectus as the Velan Consent Proposals, and an executed written consent in support of the Velan Consent Proposals, along with a request for Progenics to establish a record date to determine the Progenics stockholders entitled to consent to the corporate actions set forth in the Velan Consent Proposals in writing in lieu of a meeting of the Progenics stockholders.

Also on September 18, 2019, Mr. Venkataraman and his associate, Deepak Sarpangal, told two other representatives of SVB Leerink in separate interactions during a conference hosted by SVB Leerink that Mr. Venkataraman knew about the contemplated merger – and that a specific representative of SVB Leerink was a member of the team advising Lantheus Holdings – from two sources, one of whom was an investment banker. Mr. Venkataraman also told such representatives of SVB Leerink that Velan, Mr. Venkataraman and its affiliates, which are referred to in this joint proxy statement/prospectus, collectively, as the Velan Group, opposed the contemplated merger and, in one instance, stated that Mr. Venkataraman would spend millions of dollars to prevent such a deal from taking place. At dinner that night at the SVB Leerink conference, Mr. Sarpangal sat next to a Progenics director but did not raise the topic of the merger.

On September 19, 2019, Velan filed Amendment No. 3 to Schedule 13D with the SEC, reporting that as of September 19, 2019, Velan collectively beneficially owned an aggregate of 10,161,733 shares of Progenics common stock, constituting approximately 11.8% of the shares of Progenics common stock outstanding.

Also on September 19, 2019, Velan delivered a letter to Progenics, demanding the inspection of certain books, records and documents of Progenics under Section 220 of the DGCL. Velan sought books and records from Progenics to communicate with Progenics stockholders in connection with a consent solicitation in furtherance of the proposals set forth in the consent solicitation filed by Velan on September 18, 2019.

On conference calls with members of Lantheus Holdings management and representatives of White & Case on September 20, 2019, representatives of SVB Leerink briefed members of Lantheus Holdings management

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regarding SVB Leerink's September 18, 2019 interactions with Velan. Representatives of SVB Leerink also summarized in general terms SVB Leerink's historical and ongoing relationship with Mr. Venkataraman and his affiliated businesses. At the request of Lantheus Holdings, a representative of SVB Leerink provided Lantheus Holdings a supplemental written overview of its past and current business relationships with businesses affiliated with Mr. Venkataraman.

On September 20, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and Jefferies. Representatives of Jefferies provided an update regarding negotiations and discussions with Lantheus Holdings concerning its potential acquisition of Progenics. Representatives of Jefferies reviewed with the Progenics Board a (i) preliminary financial analysis of the potential acquisition of Progenics by Lantheus Holdings, including the implied premium offered to the Progenics stockholders in the contemplated transaction based on the most recent closing prices of the Progenics and Lantheus Holdings common stock and (ii) other financial aspects of the contemplated merger. Representatives of Jefferies also updated the Progenics Board on the status of the due diligence conducted on Progenics and conducted on Lantheus Holdings. The Progenics Board, together with Progenics management, discussed updates to the financial projections of Progenics prepared by Progenics management, including, among others, changes to reflect a reduced forecast for AZEDRA® sales. The Progenics Board, together with Progenics management, discussed the risks and assumptions relating to such updated Progenics financial projections, including the risks associated with achieving such financial projections. The Progenics Board, together with Progenics management, then discussed the financial projections of Lantheus Holdings prepared by Progenics management following due diligence conducted by Progenics on Lantheus Holdings, including the risks and assumptions relating to such financial projections, including the risks associated with Lantheus Holdings achieving such financial projections. Following such discussion, the Progenics Board approved such financial projections of Progenics and Lantheus Holdings, in each case, as prepared by Progenics management, for use by Jefferies in the financial analysis described in "—Opinion of Progenics' Financial Advisor" beginning on page 129 of this joint proxy statement/prospectus. The Progenics Board then reviewed the updated relationship information provided by Jefferies. See "—Opinion of Progenics' Financial Advisor" beginning on page 129 of this joint proxy statement/prospectus. A representative of O'Melveny then provided an update regarding the negotiation of the draft merger agreement with Lantheus Holdings and White & Case and summarized certain material provisions and the then current negotiation positions based on recent discussions with White & Case, including the "deal protection" provisions in the draft merger agreement. The Progenics Board discussed certain material provisions in the merger agreement and provided feedback to the O'Melveny representative regarding the material provisions in the draft merger agreement. The Progenics Board then discussed the consent solicitation initiated by Velan. Following discussion, the Progenics Board approved filing a consent solicitation revocation statement with the SEC substantially in the form provided to the Progenics Board and the appointment of an independent inspect of elections.

Later on September 20, 2019, representatives of O'Melveny and representatives of White & Case discussed the revised merger agreement sent by representatives of White & Case to representatives of O'Melveny on September 17, 2019.

Later on September 20, 2019, representatives of O'Melveny delivered to representatives of White & Case a revised draft of the merger agreement. In the revised draft of the merger agreement, Progenics (i) reinserted the provision that would permit Progenics to terminate the merger agreement in order to enter into a transaction providing for a superior proposal, (ii) did not specify the amount of the termination fees that may be payable by either Progenics or Lantheus Holdings under the merger agreement, (iii) deleted the provision requiring Progenics to pay a termination fee if Lantheus Holdings terminated the merger agreement as a result of any breach of any provision of Section 7.5 of the merger agreement by Progenics, (iv) agreed to the Lantheus Holdings expense reimbursement provision subject to a cap of 0.5% of the equity value of Progenics and added in a mutual Progenics expense reimbursement provision, (v) deleted the provision allowing Lantheus Holdings to terminate the merger agreement and obligating Progenics to pay a termination fee 200 basis points higher than the Progenics termination fee as a result of a willful and material breach by Progenics of any covenants or other

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agreements in the merger agreement and (vi) reinserted the exclusion to the definition of “material adverse effect” for any adverse development or events with respect to any of Progenics’ existing or pipeline products (while the definition of Progenics “intervening event” was broadened by the deletion of certain corresponding carve-outs).

On September 23, 2019, Velan delivered an additional letter to Progenics, which is referred to in this joint proxy statement/prospectus as the September 23 Letter, demanding the inspection of certain books, records and documents of Progenics pursuant to Section 220 of the DGCL. The September 23 Letter demanded books and records to investigate Progenics’ officers’ and directors’ alleged potential breaches of fiduciary duty. In the September 23 Letter, Velan alleged that Progenics officers and directors may have breached their fiduciary duties in four main respects, (i) mismanaging Progenics’ relationships with its suppliers, including by failing to maintain back-up manufacturing capacity for AZEDRA® and clinical supplies of 1095, as well failing to secure a back-up supply for Iodine-131 (an ingredient in AZEDRA® and 1095); (ii) failing to launch AZEDRA® in a timely fashion due to various issues at the AZEDRA® manufacturing plant in Somerset, New Jersey; (iii) failing to disclose materials for Progenics’ August 8, 2018 public offering of stock that Centre for Probe Development and Commercialization (a Canadian pharmaceutical manufacturer that supplied clinical AZEDRA® and 1095) had been subject to an import ban by the FDA effective as of August 1, 2018; and (iv) issuing a June 13, 2019 press release stating that the first patient had been dosed in Progenics’ Phase-2 trial for 1095 when the patient had received only a diagnostic drug, and not 1095 itself. The Progenics Board conducted, with the assistance of counsel, a review of Velan’s allegations in the September 23 letter, and concluded on or about October 31, 2019 that no breach of fiduciary duty occurred concerning these issues, and that Progenics’ public filings (including the offering materials for the August 8, 2018 offering and the June 13, 2019 press release) were true and accurate in all material respects.

Also on September 23, 2019, representatives of O’Melveny and representatives of White & Case discussed the revised merger agreement sent by representatives of O’Melveny to representatives of White & Case on September 20, 2019.

Also on September 23, 2019, members of Lantheus Holdings management and its advisors discussed due diligence findings to date.

On September 25, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O’Melveny and Jefferies. Representatives of Jefferies reviewed with the Progenics Board an updated preliminary financial analysis of the contemplated acquisition of Progenics by Lantheus Holdings, including the implied premium to the Progenics stockholders based on the most recent closing prices of Progenics common stock and Lantheus Holdings common stock. Representatives of Jefferies responded to questions from the Progenics Board regarding such financial analysis and the valuation methodologies, including the assumptions underlying the analysis and risks related to those assumptions. The Progenics Board further discussed with representatives of Jefferies the potential impact of stock price fluctuation on the value received by Progenics stockholders and the status of investor communications relating to the announcement of the merger. The Progenics Board then discussed the demands sent by Velan for books and records. Following discussion, the Progenics Board instructed O’Melveny to prepare a response letter to Velan.

Also on September 25, 2019, Progenics filed its preliminary consent revocation statement on Schedule 14A with the SEC. The consent revocation statement asked the Progenics stockholders to withhold or revoke consents to the Velan Consent Proposals.

Also on September 25, 2019, representatives of White & Case delivered to representatives of O’Melveny a revised draft of the merger agreement. In the revised draft of the merger agreement, Lantheus Holdings, among other things, (i) deleted the provision that would permit Progenics to terminate the merger agreement to enter into a transaction providing for a superior proposal, (ii) specified the amount of the termination fees that may be

payable by either Progenics or Lantheus Holdings under the merger agreement as 3.5% of the equity value of Progenics, (iii) reinserted the provision requiring Progenics to pay a termination fee if Lantheus Holdings terminated the merger agreement as a result of any breach of any provision of Section 7.5 of the merger agreement by Progenics, (iv) revised the Lantheus Holdings expense reimbursement provision subject to a cap to equal the Progenics termination fee and deleted the mutual Progenics expense reimbursement provision, (v) reinserted the provision allowing Lantheus Holdings to terminate the merger agreement and obligating Progenics to pay a termination fee equal to 4.75% of the Progenics' equity value as a result of a willful and material breach by Progenics of any covenants or other agreements in the merger agreement and (vi) revised the exclusion to the definition of "material adverse effect" for any adverse development or events with respect to any of Progenics' products that are in the Phase 1 or early stage of review and development (and narrowed the definition of "intervening event" by re-inserting carve-outs relating to Progenics' existing or pipeline products).

On September 26, 2019 the Lantheus Holdings Board held a full day special meeting with members of Lantheus Holdings management, as well as representatives of White & Case, SVB Leerink and Lantheus Holdings' strategic consulting, clinical development, regulatory and accounting advisors and certain other advisors. The purpose of the meeting was to provide the Lantheus Holdings Board with the results of the diligence conducted with respect to Progenics, including updates on Progenics' commercial portfolio, such as AZEDRA® and other pipeline assets of Progenics. Members of Lantheus Holdings management also presented its updated strategic plan. Representatives of SVB Leerink provided an updated financial analysis to the Lantheus Holdings Board. A representative of White & Case summarized the current draft of the merger agreement, including certain deal protection measures. The Lantheus Holdings Board also discussed Progenics' request that one of its board members be added to the Lantheus Holdings Board. Management then recommended that Lantheus Holdings proceed with the transaction, but based on due diligence findings, with a lower pro forma fully diluted ownership of the combined company for Progenics stockholders of approximately 35.0% which implied an exchange ratio of 0.2498. Following discussion among the members of the Lantheus Holdings Board, management and their advisors the Lantheus Holdings Board instructed Ms. Heino to convey the revised offer to Progenics. Representatives of White & Case then reviewed with the Lantheus Holdings Board disclosure that had been provided by SVB Leerink before the meeting concerning its material relationships and engagements with the Velan Group. The Lantheus Holdings Board determined that such relationships or engagements would not interfere with the SVB Leerink's abilities to provide financial advisory services to Lantheus Holdings.

On September 26, 2019, Progenics responded to Velan's September 19 demand and agreed to provide the books and records requested by Velan. Progenics and Velan entered into a confidentiality agreement, under which Velan agreed to keep confidential the information provided by Progenics.

Also on September 26, 2019, representatives of O'Melveny and representatives of White & Case had a conference call during which representatives of O'Melveny, on behalf of Progenics, presented a proposal with respect to certain provisions in the merger agreement, which included, among other things, Progenics' agreeing to (i) delete the provision that would permit Progenics to terminate the merger agreement in order to enter into a transaction providing for a superior proposal, (ii) the termination fee of 3.5% of the equity value of Progenics, (iii) a provision obligating Progenics to pay a termination fee if Lantheus Holdings terminated the merger agreement as a result of a willful and material breach of any provision of Section 7.5(a) of the merger agreement by Progenics, subject to Lantheus Holdings agreeing to a reciprocal provision and (iv) the Lantheus Holdings expense reimbursement provision subject to a cap equal to 1% of the equity value of Progenics; provided, that Lantheus Holdings would agree to (A) deleting the provision allowing Lantheus Holdings to terminate the merger agreement and obligating Progenics to pay a termination fee equal to 4.75% of the equity value of Progenics as a result of a willful and material breach by Progenics of any covenants or other agreements in the merger agreement and (B) excluding any adverse development or events with respect to any of Progenics' existing or pipeline products from the definition of "material adverse effect."

On September 26, 2019, Mr. Baker and Ms. Heino met in-person and Ms. Heino communicated to Mr. Baker that based on Lantheus Holdings' due diligence findings, Lantheus Holdings would be willing to pursue a potential

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acquisition of Progenics which would result in Progenics stockholders holding pro forma fully diluted ownership of the combined company of approximately 35.0% and currently resulted in an exchange ratio of 0.2498.

On September 27, 2019, at the direction of Lantheus Holdings, representatives of SVB Leerink spoke with representatives of Jefferies and conveyed that based on Lantheus Holdings' due diligence findings, Lantheus Holdings would only be willing to pursue a potential acquisition of Progenics that would result in Progenics stockholders holding pro forma fully diluted ownership of the combined company of approximately 35.0%, implying an exchange ratio of 0.2498. In addition, representatives of SVB Leerink communicated that based on interviews conducted with the members of the Progenics Board and the current composition of the Lantheus Holdings Board, the Lantheus Holdings Board was willing to appoint only one Progenics director to the Lantheus Holdings Board at the closing of the merger.

Later on September 27, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and Jefferies. Representatives of Jefferies reported to the Progenics Board that representatives of SVB Leerink, on behalf of Lantheus Holdings, had informed representatives of Jefferies that Lantheus Holdings wished to pursue the potential acquisition of Progenics, but that based on diligence conducted by Lantheus Holdings on Progenics, Lantheus Holdings was reducing its offer to an implied exchange ratio of 0.2498, based on Progenics stockholders holding pro forma fully diluted ownership of the combined company of approximately 35.0% and that the Lantheus Holdings Board was willing to appoint only one Progenics director to the Lantheus Holdings Board upon the closing of the merger. Representatives of Jefferies reviewed with the Progenics' Board the implied premiums to the Progenics stockholders based on the most recent closing prices of Progenics common stock and Lantheus Holdings common stock comparing 36.5% pro forma fully diluted ownership of the Progenics stockholders in the combined company to 35.0% pro forma fully diluted ownership of the Progenics stockholders in the combined company. Following discussion by the Progenics Board, the Progenics Board agreed that Jefferies should communicate to SVB Leerink that Progenics stockholders should continue to own 36.5% of the combined company on a fully diluted basis upon the closing of the merger, but that the Progenics Board would accept one Progenics director serving on the Lantheus Holdings Board upon the closing of the merger. The Progenics Board also set October 7, 2019 as the record date for the consent solicitation. The Progenics Board also reviewed and discussed Velan's September 23 Letter.

Later on September 27, 2019, representatives of Jefferies spoke with representatives of SVB Leerink and conveyed the proposal of the Progenics Board that Progenics stockholders should continue to own 36.5% of the combined company on a fully diluted basis and that only one Progenics director would be appointed to the Lantheus Holdings Board at the closing of the merger.

Also on September 27, 2019, representatives of O'Melveny and representatives of White & Case had a conference call during which representatives of White & Case, on behalf of Lantheus Holdings, presented Lantheus Holdings' response to Progenics' proposal delivered on September 26, 2019, which included, among other things, (i) that the provision obligating Progenics to pay a termination fee if Lantheus Holdings terminated the merger agreement as a result of a willful and material breach of any provision of Section 7.5(a) of the merger agreement by Progenics would apply to any provision of Section 7.5 of the merger agreement, (ii) that Lantheus Holdings would have the right to receive damages not to exceed 3.5% of the equity value of Progenics following any termination of the merger agreement in the event of a willful and material breach by Progenics of any covenants or other agreements in the merger agreement, but that Lantheus Holdings would not have an affirmative termination right relating thereto and (iii) that any adverse development or events with respect to any of Progenics' existing or pipeline products (other than any adverse development or event relating to a specific development program of Progenics) would not be excluded from the definition of "material adverse effect."

On September 28, 2019, at the direction of Lantheus Holdings, representatives of SVB Leerink had multiple interactions with representatives of Jefferies to convey that the Lantheus Holdings Board was willing to move forward with an acquisition of Progenics only on the basis of Progenics stockholders holding pro forma ownership of the combined company of no more than 35.0% of the combined company on a fully diluted basis

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and that such offer was a final proposal on a take-it-or-leave-it basis. Representatives of SVB Leerink further emphasized that the Lantheus Holdings Board arrived at the implied ownership threshold of 35.0% because of due diligence findings and that such threshold was critical to the pro forma financial profile of the merger for the Lantheus Holdings Board.

Later on September 28, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and Jefferies. Representatives of Jefferies reported to the Progenics Board Jefferies' discussion with SVB Leerink and that representatives of SVB Leerink communicated that the Lantheus Holdings Board was not willing to move forward with an acquisition of Progenics that would result in the Progenics stockholders having an implied ownership amount of more than 35.0% of the combined company on a fully diluted basis and that such proposal represented Lantheus Holdings' final offer and was on a take-it-or-leave-it basis. Representatives of Jefferies stated that representatives of SVB Leerink emphasized that the Lantheus Holdings Board arrived at this implied ownership threshold of 35.0% because of due diligence findings and that such threshold was critical to the pro forma financial profile of the merger for the Lantheus Holdings Board. The Progenics Board discussed the position of the Lantheus Holdings Board, including, among others, the risk and return of Progenics as a standalone company, the market check conducted by Jefferies at the instruction of the Progenics Board and a material point open in the draft merger agreement relating to the exclusion to the definition of "material adverse effect" for any adverse development or events with respect to any of Progenics' existing or pipeline products not including any adverse development or event relating to a specific development program of Progenics. Following such discussion, the Progenics Board instructed Jefferies to inform SVB Leerink that Progenics would agree to an exchange ratio that would result in Progenics stockholders holding pro forma fully diluted ownership of the combined company of approximately 35.0%, subject to Lantheus Holdings agreeing to Progenics' position on the definition of "material adverse effect".

Later on September 28, 2019, representatives of Jefferies informed representatives of SVB Leerink that the Progenics Board was willing to agree to the Lantheus Holdings Board proposal of an exchange ratio that would result in Progenics stockholders holding pro forma fully diluted ownership of the combined company of approximately 35.0% and the appointment of one Progenics director to the Lantheus Holdings Board at the closing of the merger, but that Lantheus Holdings would need to agree to exclude adverse developments or events concerning a specific development program of Progenics from the definition of "material adverse effect".

Also on September 28, 2019, Progenics confirmed to Velan that the Progenics Board had adopted a record date for determining the stockholders entitled to consent to the actions set forth in the Velan Consent Proposals and that such record date would be made available through public disclosure to all stockholders.

Also on September 28, 2019, representatives of O'Melveny sent the initial draft of the Progenics disclosure letter to representatives of White & Case.

On September 29, 2019, representatives of O'Melveny delivered to representatives of White & Case a revised draft of the merger agreement. The revised draft merger agreement reflected the proposal made by representatives of O'Melveny, on behalf of Progenics, to representatives of White & Case on September 26, 2019 and as modified by the counterproposals made by representatives of White & Case, on behalf of Lantheus Holdings, to representatives of O'Melveny on September 27, 2019, except for the counterproposal by representatives of White & Case that that the exclusion to the definition of "material adverse effect" for any adverse development or events with respect to any of Progenics' existing or pipeline products exclude any adverse development or event relating to a specific development program of Progenics.

Also on September 29, 2019, representatives of White & Case sent the initial draft of the Lantheus Holdings disclosure letter to representatives of O'Melveny.

On September 30, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and Jefferies. Representatives of Jefferies reviewed with the Progenics Board an updated preliminary financial analysis of the contemplated acquisition of Progenics by Lantheus Holdings,

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including the implied premium to the Progenics stockholders based on the most recent closing prices of Progenics common stock and Lantheus Holdings common stock. Representatives of Jefferies then reported to the Progenics Board on discussions with SVB Leerink regarding communication strategies to stockholders of Progenics and final synergies that may result from the potential acquisition of Progenics by Lantheus Holdings, as prepared by Lantheus Holdings management. A representative of O'Melveny provided an update on the status of the merger agreement negotiations and the key remaining open terms therein, including with respect to the exclusion to the definition of "material adverse effect" for any adverse development or events with respect to any of Progenics' existing or pipeline products. The Progenics Board provided input on certain of such key remaining open terms in the merger agreement. A representative of O'Melveny also reported on due diligence findings based on due diligence conducted on Lantheus Holdings. The Progenics Board then discussed that Lantheus Holdings had communicated that it was willing to agree to Mr. Campbell's serving on the Lantheus Holdings Board upon the closing of the merger.

Also on September 30, 2019, Progenics responded to Velan's September 23 Letter, offering to provide certain information in response to Velan's request.

Also on September 30, 2019, representatives of White & Case delivered to representatives of O'Melveny a revised draft of the merger agreement. The revised draft of the merger agreement provided that certain adverse developments or events relating to a specific development program of Progenics would be a "material adverse effect."

Also on September 30, 2019, Velan filed Amendment No. 1 to its preliminary consent solicitation statement.

From September 30, 2019 to October 1, 2019, representatives of O'Melveny and representatives of White & Case exchanged multiple drafts of the merger agreement. Lantheus Holdings accepted Progenics' formulation of the exclusion to the definition of "material adverse effect" for any adverse development or events with respect to any of Progenics' existing or pipeline products.

On October 1, 2019, representatives of O'Melveny and representatives of White & Case had multiple conversations regarding the merger agreement.

On the afternoon of October 1, 2019, representatives of SVB Leerink, on behalf of Lantheus Holdings, delivered to representatives of Jefferies certain financial forecasts and unaudited prospective financial information prepared by Lantheus Holdings management relating to each of Lantheus Holdings and Progenics, on a standalone basis, and relating to Lantheus Holdings and Progenics, as a combined company. Such financial forecasts and unaudited prospective financial information were not used by Jefferies in the financial analysis described in "—Opinion of Progenics' Financial Advisor" beginning on page 129 of this joint proxy statement/prospectus as the Progenics Board had previously instructed Jefferies to use the Progenics financial projections and Progenics management Lantheus financial projections, each of which were prepared by Progenics management and approved by the Progenics Board, in such financial analyses.

Based on the closing prices of shares of Lantheus Holdings common stock and shares of Progenics common stock on October 1, 2019 and updated fully diluted share data of each of Lantheus Holdings and Progenics, the exchange ratio that would result in Progenics stockholders holding pro forma fully diluted ownership of the combined company of approximately 35.0% was determined to be 0.2502 of a share of Lantheus Holdings common stock for each share of Progenics common stock.

Also on October 1, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and Jefferies. At such meeting, Jefferies reviewed with the Progenics Board Jefferies' financial analyses of the exchange ratio and rendered an oral opinion, confirmed by delivery of a written opinion dated October 1, 2019 to the Progenics Board to the effect that, as of that date and subject to the assumptions, limitations, qualifications and conditions set forth in such written opinion, the exchange ratio was

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fair, from a financial point of view, to the holders of Progenics common stock. See “—Opinion of Progenics’ Financial Advisor” beginning on page 129 of this joint proxy statement/prospectus. A representative of O’Melveny then summarized the material terms in the merger agreement and discussed a proposed exclusive forum By-Law amendment. Following the discussion, the Progenics Board unanimously (i) determined that the merger agreement and the transactions contemplated thereby (including the merger) are fair to and in the best interests of Progenics and its stockholders, (ii) approved, adopted and declared advisable the merger agreement and the transactions contemplated thereby (including the merger), (iii) directed that the adoption of the merger agreement be submitted to a vote at a meeting of the Progenics stockholders and (iv) subject to Section 7.5(d) of the merger agreement, recommended the adoption of the merger agreement by Progenics stockholders. The Progenics Board also approved the exclusive forum By-Law amendment.

Also on October 1, 2019, the Lantheus Holdings Board held a telephonic meeting in which a representative of White & Case advised on the Lantheus Holdings Board’s fiduciary duties and members of Lantheus Holdings management and a representative of White & Case provided an updated due diligence report and summary of the terms of the draft merger agreement. Representatives of SVB Leerink then presented SVB Leerink’s financial analysis with respect to the proposed merger. At the conclusion of its financial analysis, a representative of SVB Leerink rendered an oral opinion, which was subsequently confirmed by delivery of a written opinion dated October 1, 2019, to the Lantheus Holdings Board to the effect that, as of such date and based upon and subject to the various assumptions, qualifications and limitations upon the review undertaken by SVB Leerink in preparing its opinion, the exchange ratio provided for in the merger agreement was fair, from a financial point of view, to Lantheus Holdings. See “—Opinion of Lantheus Holdings’ Financial Advisor” beginning on page 120 of this joint proxy statement/prospectus. Representatives of White & Case provided a detailed review of the current draft of the merger agreement. Members of Lantheus Holdings management and representatives of White & Case also responded to questions relating to interim operating covenants, retention plans, deal protection measures and the status of Progenics as a target of shareholder activism. Following further discussion and executive session, the Lantheus Holdings Board unanimously (i) determined that the merger agreement and the transactions contemplated thereby (including the merger) were fair to, and in the best interests of, Lantheus Holdings and its stockholders, (ii) approved, adopted and declared advisable the merger agreement, the merger and other transactions contemplated thereby (including the merger) (iii) and resolved to recommend the stock issuance proposal to Lantheus Holdings stockholders.

On October 2, 2019, Progenics and Lantheus Holdings executed the merger agreement.

On the morning of October 2, 2019, Lantheus Holdings and Progenics issued a joint press release and held a joint conference call with analysts and investors, announcing the transaction.

Also on October 2, 2019, Velan delivered to Progenics a further request demanding inspection of certain additional books, records and documents of Progenics pursuant to Section 220 of the DGCL. This additional demand related to alleged delays in Progenics’ proposed AZEDRA® basket trial arising from FDA concerns.

Between October 2, 2019 and November 6, 2019, Progenics and Velan each filed various press releases and stockholder letters expressing their views about the merger.

On October 4, 2019, Progenics filed Amendment No. 1 to its preliminary consent revocation statement on Schedule 14A with the SEC.

On October 8, 2019, Velan filed a definitive consent solicitation statement on Schedule 14A with the SEC to solicit written consents from the Progenics stockholders for the Velan Consent Proposals. Velan’s definitive consent solicitation disclosed that Velan collectively beneficially owned an aggregate of 10,161,733 shares of Progenics common stock, constituting approximately 11.7% of the shares of Progenics common stock outstanding.

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Also on October 8, 2019, Progenics filed its definitive consent revocation statement on Schedule 14A with the SEC. The consent revocation statement asked the Progenics stockholders to withhold or revoke consents to the Velan Consent Proposals.

On October 11, 2019, Velan filed a supplement to its consent solicitation statement on Schedule 14A with the SEC in which Velan disclosed that, based on the number of shares outstanding as of record date for the consent solicitation (as disclosed in Progenics' definitive consent revocation statement on Schedule 14A filed on October 8, 2019), all ownership percentages and the number of shares of Progenics common stock required to consent to the Velan Consent Proposals remains unchanged from that disclosed in Velan's definitive consent solicitation statement on Schedule 14A filed with the SEC on October 8, 2019.

Also on October 11, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and a representative of O'Melveny. Mr. Baker provided an update to the Progenics Board regarding the potential acquisition of Progenics by Lantheus Holdings, including input received from Progenics stockholders. The Progenics Board then discussed the upcoming meetings with Institutional Shareholder Services Inc., which is referred to in this joint proxy statement/prospectus as ISS, and Glass, Lewis & Co., which is referred to in this joint proxy statement/prospectus as Glass Lewis. The Progenics Board also discussed scheduling Progenics stockholder meetings to solicit feedback. The Progenics Board then, with Mr. Baker recused, approved that Dr. Ferrante and Ms. Williams will serve as co-chairs of the Progenics Board effective as of October 17, 2019.

On October 14, 2019, Ms. Heino and Mr. Marshall held a telephone conference call with Messrs. Venkataraman and Sarpangal, Kevin McNeill and Velan Nominees Gérard Ber and Dr. Eric J. Ende to discuss the transaction and Lantheus Holdings' plans.

On October 15, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny and V&E. Mr. Baker discussed with the Progenics Board the potential of Mr. Baker resigning as the Chief Executive Officer of Progenics and as a member of the Progenics Board in light of the potential acquisition of Progenics by Lantheus Holdings and the consent solicitation commenced by Velan. The Progenics Board then discussed submitting a settlement proposal to Velan to resolve the consent solicitation commenced by Velan. The Progenics Board discussed a potential settlement offer that could be conveyed to Velan that would include (i) the resignation of Mr. Baker as the Chief Executive Officer of Progenics and as a member of the Progenics Board and (ii) the appointment of two Velan Nominees to the Progenics Board with the Progenics Board having a total of six members.

Also on October 15, 2019, Progenics received a demand to inspect books and records under Section 220 of the DGCL from the Fireman's Retirement System of St. Louis, which is referred to in this joint proxy statement/prospectus as FRS, which claimed to be a Progenics shareholder. FRS sought books and records from Progenics to investigate (i) alleged breaches of fiduciary duty concerning (a) Velan's attempt to nominate director candidates for Progenics' 2019 director election, 2019 "withhold the vote" campaign, and consent solicitation and (b) the negotiation of the merger agreement and (ii) the independence and disinterestedness of the Progenics Board.

On October 16, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny, V&E and Jefferies. The Progenics Board further discussed the potential settlement offer to Velan and instructed V&E to convey to Olshan a settlement offer that included (i) the resignation of Mr. Baker as the Chief Executive Officer of Progenics and as a member of the Progenics Board and (ii) the appointment of two Velan Nominees to the Progenics Board with the Progenics Board having a total of six members.

On October 17, 2019, V&E contacted Olshan and delivered the settlement offer authorized by the Progenics Board on October 16, 2019.

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Later on October 17, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of Jefferies. Mr. Baker discussed that the settlement offer approved by the Progenics Board was conveyed by representatives of V&E to representatives of Olshan. Mr. Fabbio conveyed to the Progenics Board that representatives of Olshan had informed representatives of V&E that Olshan did not think that such settlement offer would be enough for Velan. The Progenics Board then discussed the upcoming meetings with ISS and Glass Lewis relating to Velan's consent solicitation.

Also on October 17, 2019, Messrs. Crowley's and Kishbauch's contingent resignations from the Progenics Board became effective in accordance with Progenics' by-laws and the recommendation of the Nominating and Corporate Governance Committee of the Progenics Board.

Also on October 18, 2019, Olshan delivered to V&E Velan's rejection of Progenics' October 17, 2019 settlement proposal and relayed that Velan would not accept anything less than majority representation on the Progenics Board. Olshan presented Velan's counter-proposal, which included: (i) Velan would agree to selecting four new directors from the Velan Nominees to serve on the Progenics Board; and (ii) two directors, one of whom would be Mr. Baker, would have to resign.

On October 22, 2019, O'Melveny, on behalf of Progenics, responded to FRS' October 15, 2019 demand letter. The response sought further information concerning FRS's standing to demand books and records from Progenics under Section 220 of the DGCL.

On November 6, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny, V&E, Jefferies and MacKenzie Partners, Inc. The Progenics Board discussed the status of the consent solicitation commenced by Velan. The Progenics Board also discussed potentially appointing a new member to the Progenics Board, but ultimately did not take any such action.

On November 7, 2019, the Progenics Board held a special meeting. Also present were Mr. Fabbio and representatives of O'Melveny, V&E, Jefferies and MacKenzie Partners, Inc. The Progenics Board further discussed the status of the consent solicitation commenced by Velan and the potential director candidate.

On November 8, 2019, representatives of Velan delivered to Progenics written consents, which Velan has stated are from Progenics' stockholders holding more than 55% of the outstanding shares of Progenics common stock to remove Messrs. Baker and Scheinberg and Ms. Williams from the Progenics Board and to elect all five of the Velan Nominees to the Progenics Board.

Also on November 8, 2019, Progenics delivered to the independent inspector of election all consents and revocations that Progenics had received in connection with the consent solicitation commenced by Velan. Upon receipt of a preliminary count from the independent inspector of election, Progenics and Velan will each have an opportunity to review and challenge the validity of the consents and revocations received. Upon the completion of the review and challenge period, the independent inspector of election will prepare and certify a final tabulation of the results, which will then be publicly announced by Progenics.

On November 11, 2019, Mr. Baker tendered his resignation as a member of the Progenics Board and as the Chief Executive Officer of Progenics effective immediately.

Certain Relationships between Lantheus Holdings and Progenics

Lantheus Holdings, Progenics and their respective affiliates engage in transactions and enter into agreements with each other in the ordinary course of business. Lantheus Holdings believes that no such transaction occurring in the fiscal year ended December 31, 2018, or the four prior fiscal years had an aggregate value in excess of 1% of Lantheus Holdings' consolidated revenues for the fiscal year in which the transaction occurred. Except as described in this joint proxy statement/prospectus, there are and have been no past, present or proposed material

contracts, arrangements, understandings, relationships, negotiations or transactions during the five immediately preceding calendar years between Lantheus Holdings or its affiliates, on the one hand, and Progenics or its affiliates, on the other hand, concerning a merger, consolidation or acquisition, a tender offer for or other acquisition of securities, the election of directors, or the sale or other transfer of a material amount of assets.

Lantheus Holdings' Reasons for the Merger; Recommendation of the Lantheus Holdings Board of Directors that Lantheus Holdings Stockholders Approve the Stock Issuance

In reaching its decision to approve, and declare advisable, the merger agreement and the other transactions contemplated by the merger agreement, including the stock issuance, the Lantheus Holdings Board, as described above in “—Background of the Merger and Certain Other Developments” beginning on page 82 of this joint proxy statement/prospectus, held a number of meetings, consulted with Lantheus Holdings management and its legal, financial, commercial, regulatory and other advisors and considered a number of factors, including its knowledge of the business, assets and liabilities, results of operations, financial performance, strategic direction and prospects of each of Lantheus Holdings, Progenics, and the combined company following the merger (taking into account the results of Lantheus Holdings' due diligence of Progenics), as well as the risks in achieving those prospects.

The Lantheus Holdings Board considered a variety of factors that weighed positively in favor of the merger agreement, the merger and the other transactions contemplated by the merger agreement. These factors included the following, which are not necessarily listed in order of importance:

Strategic Benefits of the Transaction

- the merger will form an innovative commercial company with a diversified portfolio of precision diagnostics and radiopharmaceutical therapeutics that:
 - is well-positioned for sustained profitability and double-digit revenue growth;
 - has expanded research and development capabilities and an innovative development pipeline; and
 - will be led by a management team experienced in commercial execution, manufacturing operations and financial discipline;
- the combined company will have a revenue- and cash flow-generating commercial portfolio consisting of:
 - eight FDA-approved precision diagnostic drugs, anchored by Lantheus Holdings' ultrasound contrast agent DEFINITY[®], the sales of which Lantheus Holdings' commercial team has grown at a compound annual growth rate of 18.6% over the past 5 years; and
 - three FDA-approved oncology products, composed of therapeutics and artificial intelligence technology products, including AZEDRA[®], a radiopharmaceutical for certain ultra-orphan neuroendocrine tumors, the sales potential for which could be maximized by Lantheus Holdings' demonstrated commercial capabilities in complex healthcare environments and sales channels;
- the combined company's precision diagnostics portfolio will be anchored by Lantheus Holdings' microbubble franchise currently consisting of:
 - DEFINITY[®], the worldwide leading ultrasound contrast agent, which is currently indicated in the U.S. for use in patients with suboptimal echocardiograms and which is currently in two Phase 3 trials in the U.S. for an expanded indication for measuring left ventricular ejection fraction; and
 - DEFINITY RT[™], a second generation room temperature formulation, which is under development for approval first in the U.S. and then potentially in other markets;
- the combined company's complementary commercial portfolio and mid-to-late-stage pipeline of precision diagnostics and radiopharmaceutical therapeutics will create highly integrated product

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offerings in the emerging applications of radiopharmaceutical theranostics for oncology, with a specific focus on high unmet medical need:

- *neuroendocrine tumor subtypes*, with AZEDRA® (an FDA-approved therapeutic for pheochromocytoma and paraganglioma, with the potential for expanded indications into neuroblastoma and gastroenteropancreatic neuroendocrine tumors) and LMI-1195 (a Phase 3 clinical candidate for diagnosis and management of neuroendocrine tumors);
 - *prostate cancer*, with QUADRAMET® (an FDA-approved palliative therapeutic for bone metastasis), PyL® (a Phase 3 diagnostic), 1095 (a Phase 2 therapeutic) and aBSCI and PSMA AI (artificial intelligence technology products that are FDA-approved and in clinical development, respectively), as well as PSMA TTC (a Phase 1 therapeutic currently outlicensed to Bayer AG worldwide) and 1404 (a Phase 3 diagnostic currently outlicensed to ROTOP in Europe); and
 - *immuno-oncology*, with NM-01 ^{99m}Tc (a Phase 1 PDL-1 biomarker licensed by Lantheus Holdings from Nanomab);
- the combined company will have a larger and more diverse product portfolio than either company on a standalone basis, which will enable it to operate more efficiently and drive greater value in the radiopharmaceuticals market (including radioisotope suppliers, radiopharmacies, PET manufacturing facilities and large medical centers that are considered “centers of excellence”);
 - with Lantheus Holdings’ long-term, established radiopharmacy customer network, radiopharmaceutical operations and radioisotope supply chain, the combined company will be more strongly positioned to commercialize Progenics’ products and operate in the current and expected future radiopharmaceutical landscape, including operating in and responding to the current and expected future competitive, manufacturing, supply and regulatory challenges facing industry participants;
 - the combined company will be better positioned to accelerate time-to-market, use resources more efficiently and access larger markets for its pipeline by leveraging Lantheus Holdings’ and Progenics’ resources, infrastructure, expertise and industry relationships; and
 - the combined company has outlicensed several products, including flurpiridaz F 18 (a Phase 3 diagnostic) and RELISTOR® (an FDA-approved therapeutic for opioid-induced constipation), which will enable the combined company to share in the economics generated by those programs while avoiding the significant development costs necessary to advance pipeline product candidates to market and the significant commercialization costs necessary for approved products to succeed once marketed;

Financial Factors

- with Lantheus Holdings’ strong balance sheet, proven cash flow generation and disciplined approach to capital deployment, the combined company is expected to have greater financial resources and flexibility than Progenics would on a standalone basis, enabling the combined company to realize the full potential of its combined portfolio, including synergies and cost avoidance, and to invest in commercialization, research and development and additional business development opportunities for sustained profitability and revenue growth;
- no debt will be required to complete the transaction, and the high interest \$50 million loan secured by Progenics’ RELISTOR® royalties will be paid off in connection with the closing of the transaction;
- the transaction is expected to result in meaningful general and administrative expense run-rate cost synergies of approximately \$20 million by 2022 (mostly related to redundant public company costs), further savings related to prioritizing and optimizing certain pipeline assets and additional cost avoidance relating to utilizing the already existing commercial, customer service and commercial operations infrastructure at Lantheus Holdings and other potential savings opportunities relating to the procurement of materials;

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- the transaction is expected to be accretive to non-GAAP adjusted earnings per share by 2022 and GAAP earnings per share by 2023, even taking into account the large near-term investments required to properly commercialize AZEDRA[®], advance clinical development programs and ensure reliability and continuity of supply; and
- recent and historical market prices, volatility and trading information for Lantheus Holdings common stock and Progenics common stock;

Transaction Terms

Stockholder Approval

- Lantheus Holdings stockholders will be free to approve or reject the stock issuance, and their approval is a condition to the merger; and
- the Lantheus Holdings Board's belief that the outside date under the merger agreement, after which Lantheus or Progenics may terminate the merger agreement, provides the parties with sufficient time to obtain all required approvals;

Regulatory Approvals

- the terms and conditions of the merger agreement, including the regulatory and other commitments by both Lantheus Holdings and Progenics to complete the merger;
- the nature of the closing conditions in the merger agreement, including the regulatory approvals required, and the Lantheus Holdings Board's belief that those conditions are likely to be satisfied, in each case, without a material adverse impact on the respective businesses of Lantheus Holdings, Progenics or the combined company; and
- the fact that, while Lantheus Holdings is obligated to use its reasonable best efforts to complete the merger, this efforts standard does not obligate Lantheus Holdings to take any specific actions or agree to any terms, conditions or limitations as a condition to, or in connection with, obtaining any regulatory approvals required to complete the merger;

Superior Proposal Provisions and Related Termination Fees

- the merger agreement permits Lantheus Holdings, subject to certain conditions, to respond to and negotiate unsolicited acquisition proposals for Lantheus Holdings prior to the time the Lantheus Holdings stockholders approve the stock issuance;
- the merger is subject to an approval from each party's stockholders (including a majority of the outstanding shares of Progenics stock and a majority of Lantheus Holdings shares voted at a meeting at which a quorum is present), which allows sufficient time for a third party to make a superior proposal to acquire Lantheus Holdings if it desires to do so;
- the ability of the Lantheus Holdings Board, subject to certain conditions and, in certain circumstances, the payment of the Lantheus Holdings termination fee, to make a change in recommendation in response to a superior proposal or an intervening event if not doing so would be inconsistent with its fiduciary duties, as more fully described in the section titled, "The Merger Agreement—No Solicitation" beginning on page 163 of this joint proxy statement/prospectus; and
- the fact that the Lantheus Holdings Board did not believe that the termination fee that Lantheus Holdings would be required to pay in connection with a change in recommendation would preclude a third party from making a takeover proposal for or pursuing a transaction with Lantheus Holdings, and that the amount of such termination fee is consistent with provisions and termination fees in comparable transactions;

Termination and Other Fees Payable by Progenics

- the fact that Progenics is required to pay the Progenics termination fee if the merger agreement is terminated under certain circumstances described under “The Merger Agreement—Termination Fees and Expenses” beginning on page 176 of this joint proxy statement/prospectus;
- Lantheus Holdings’ ability to respond with a counteroffer to a superior proposal for Progenics or an intervening event following notice of the material terms of that proposal or event;
- the fact that Progenics is required to pay the willful breach damages payment if the agreement is terminated following Progenics’ willful breach or failure to perform any of its covenants under the merger agreement, as more fully described in the section titled, “The Merger Agreement—Termination Fees and Expenses” beginning on page 176 of this joint proxy statement/prospectus;
- the fact that Progenics is required to pay to Lantheus Holdings the Lantheus Holdings expense reimbursement if the Progenics stockholders vote on and fail to adopt the merger agreement at the Progenics special meeting, as more fully described in the section titled, “The Merger Agreement—Termination Fees and Expenses” beginning on page 176 of this joint proxy statement/prospectus;

Other Transaction Terms

- the opinion of SVB Leerink rendered orally on October 1, 2019 and subsequently confirmed in writing, to the Lantheus Holdings Board that, as of such date, and based upon and subject to the various assumptions made, procedures followed, matters considered and qualifications and limitations on the scope of the review undertaken as set forth in SVB Leerink’s written opinion, the merger consideration to be paid by Lantheus Holdings pursuant to the merger agreement was fair, from a financial point of view, to Lantheus Holdings. See “Opinion of Lantheus Holdings’ Financial Advisor” beginning on page 120 of this joint proxy statement/prospectus;
- the fact that, because the exchange ratio under the merger agreement is fixed (and will not be adjusted for fluctuations in the market price of Lantheus Holdings common stock or Progenics common stock during the period prior to the completion of the merger), Lantheus Holdings has greater certainty as to the number of shares of Lantheus Holdings common stock to be issued in the merger, and holders of outstanding Lantheus Holdings common stock as of immediately prior to completion of the merger will hold approximately 65% of the combined company’s outstanding common stock (on a fully diluted basis) immediately after completion of the merger;
- the fact that ten members of the eleven-member board of directors of the combined company will be comprised of current members of the Lantheus Holdings Board, including Mr. Markison and Ms. Heino, who will continue as the Chairman of Lantheus Holdings and the President and Chief Executive Officer and a director of Lantheus Holdings, respectively, following the merger;
- the merger agreement provides for reasonable restrictions on the operations of Progenics’ business prior to completion of the merger; and
- the merger consideration, as well as the other transaction terms, including the parties’ representations, warranties and covenants, the conditions to their respective obligations and the termination provisions, were the result of a series of arm’s length negotiations between Lantheus Holdings and its advisors, on the one hand, and Progenics and its advisors, on the other hand;

Other Factors Weighing in Favor of the Transaction

- the respective businesses, operations, management, financial condition, earnings, trading prices, competitive positions and prospects, on a stand-alone basis and on a forecasted combined basis of Lantheus Holdings and Progenics;

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- the results of Lantheus Holdings management's and its advisors' thorough due diligence investigation of Progenics, including the results of the commercial, manufacturing, regulatory/clinical development, financial, accounting, legal and intellectual property due diligence investigations of Progenics;
- the comprehensive strategic, operational and financial plans that Lantheus Holdings management and its advisors formulated to address certain commercialization, manufacturing, regulatory and clinical development considerations identified during due diligence;
- the review by the Lantheus Holdings Board with its legal and financial advisors of the structure of the merger and the financial and other terms of the merger agreement and the merger;
- trends and competitive developments in the radiopharmaceutical industry and the range of strategic alternatives available to Lantheus Holdings;
- the potential for the combined company to acquire additional, complementary radiopharmaceutical products and pipeline candidates to pursue significant market opportunities in oncology;
- the increasing emphasis on and utility of precision medicine, which the combined company is expected to be well positioned to address with its next generation radiopharmaceutical products and commercial deployment strategies that focus on clinical features and benefits; and
- the fact that Lantheus Holdings management has implemented an integration project management office and will work with members of Progenics management to enable a successful integration of Lantheus Holdings and Progenics following the completion of the merger.

Risks, Uncertainties and Other Factors Weighing Negatively Against the Transaction

The Lantheus Holdings Board also considered a variety of risks and other potentially negative factors concerning the merger agreement, the merger and the other transactions contemplated by the merger agreement. These factors included the following, which are not necessarily listed in order of importance:

- the exchange ratio is fixed and will not change based on changes in the trading prices of Lantheus Holdings common stock or Progenics common stock or changes in the business performance or financial results of Lantheus Holdings or Progenics; accordingly, if the value of Progenics' business declines relative to the value of Lantheus Holdings' business prior to completion of the merger, the ownership percentage of the current Progenics stockholders in the combined company may exceed Progenics' relative economic contribution to the combined company;
- the expected dilution associated with the stock issuance and the assumption of outstanding Progenics equity awards;
- the risk that the potential benefits of the merger may not be fully realized, including the possibility that transaction synergies or cost savings may not be realized to the extent or on the timeline expected, or at all;
- the risk that Lantheus Holdings or Progenics may not achieve their financial projections and that general economic and market conditions outside the control of the parties to the merger agreement could deteriorate, and that Lantheus Holdings paid more for Progenics than the value it will derive from the merger;
- the risks inherent in the businesses of Lantheus Holdings and Progenics, including the costs and risks of manufacturing and supply issues and delay and failure in clinical development programs and commercial launch efforts;
- the risks and costs of accelerating AZEDRA® commercialization efforts;
- the risks and costs of expanding and scaling up Progenics' internal and contract radiopharmaceutical manufacturing footprint in order to satisfy commercial and clinical trial demand for all of its products and pipeline candidates;

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- the risks and costs associated with advancing Progenics' clinical development program in an accelerated manner to realize the potential for those assets, including but not limited to:
 - obtaining positive results from the Phase 3 PyL™ CONDOR trial and preparing the NDA submission for PyL™ by July 2020;
 - resolving the FDA clinical hold on the Phase 3 AZEDRA® life cycle management program by redesigning those clinical trials in a way that satisfies FDA requirements for potential indications in neuroblastoma and gastroenteropancreatic neuroendocrine tumors; and
 - resolving the FDA's current import ban on supply of 1095 from the Centre for Probe Development and Commercialization, the contract manufacturer of clinical supply in Canada, which prevents supply of 1095 to clinical trial sites in the U.S., and eliminating any constraints on the manufacturing of 1095 needed to supply sufficient product in order to expeditiously conduct Phase 2 trials for 1095;
- the risks associated with RELISTOR®, including the durability of revenues and Progenics' royalty stream and potential additional challenges to the RELISTOR® patent portfolio;
- the risk of diverting Lantheus Holdings management focus and resources from other strategic opportunities and from operational matters, and potential disruption of Lantheus Holdings management associated with the merger and integrating the companies;
- the risk that the merger may not be completed despite the parties' efforts or that completion of the merger may be delayed, even if the requisite approvals are obtained from Lantheus Holdings stockholders and Progenics stockholders, including the possibility that conditions to the parties' obligations to complete the merger may not be satisfied, and the potential resulting disruptions to Lantheus Holdings' business (and the disruptions of the combined company if the merger is ultimately completed);
- the risks and costs to Lantheus Holdings during the pendency of the merger or if the merger is not completed on Lantheus Holdings' businesses (or, following the completion of the merger, on the combined company's businesses), including uncertainty about the effect of the proposed merger on Lantheus Holdings' employees, customers, potential customers, distributors, suppliers, regulators and other parties, which may impair Lantheus Holdings' ability to attract, retain and motivate key personnel and could cause customers, potential customers, suppliers, distributors and others to seek to change or not enter into business relationships with Lantheus Holdings, and the risk that the trading price of the Lantheus Holdings common stock could be materially adversely affected if the merger is not completed;
- the risk that the merger could potentially breach certain restrictive covenants or other terms under Progenics' contracts with third parties or trigger termination rights of those third parties;
- the merger is subject to the approval of the Progenics stockholders, which are free to approve or reject the merger;
- the possibility that governmental authorities might seek to require certain actions of Lantheus Holdings or Progenics or impose certain terms, conditions or limitations on Lantheus Holdings' or Progenics' businesses in connection with granting approval of the merger or might otherwise seek to prevent or delay the merger, including the risk that governmental authorities might seek an injunction or order in court;
- the fact that Lantheus Holdings has incurred and will continue to incur significant costs and expenses in connection with the contemplated transaction, including legal, financial advisory, accountants' and strategic consultants' fees and costs, and expenses with respect to potential proxy contests, regardless of whether the merger is completed, and will absorb the costs and expenses of Progenics if the merger is completed;

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- the merger agreement permits Progenics, subject to certain conditions, to respond to and negotiate unsolicited acquisition proposals prior to the time that Progenics stockholders approve the merger;
- Progenics' ability, subject to certain conditions and in certain circumstances the payment of the Progenics termination fee, to make a change in recommendation in response to a superior proposal or an intervening event if not doing so would be inconsistent with its fiduciary duties, as more fully described in the section titled, "The Merger Agreement—No Solicitation," beginning on page 163 of this joint proxy statement/prospectus;
- the risk that any termination fee or expense reimbursement payable to Lantheus Holdings will not be sufficient compensation for the harm caused by the termination or the expenses actually incurred by Lantheus Holdings;
- under certain circumstances under the merger agreement, Lantheus Holdings may be required to pay the Lantheus Holdings termination fee, which is described in the section titled "The Merger Agreement—Termination Fees and Expenses" beginning on page 176 of this joint proxy statement/prospectus;
- the fact that Lantheus Holdings will be subject to certain restrictions on the conduct of its businesses during the period between signing the merger agreement and completion of the merger, which could prevent Lantheus Holdings from taking certain actions or otherwise pursuing certain business opportunities during the pendency of the merger;
- the limitations imposed in the merger agreement on the solicitation or consideration by Lantheus Holdings of alternative business combinations;
- Progenics' ability to specifically enforce all of Lantheus Holdings' obligations under the merger agreement;
- the risk of litigation related to the transaction and the associated costs, burden and inconvenience involved in defending those proceedings;
- the risk that the integration may result in material challenges, including, without limitation:
 - the possibility of faulty assumptions underlying expectations regarding the integration process;
 - integrating corporate and administrative infrastructures in geographically separate organizations and eliminating duplicative expenses;
 - unanticipated issues in integrating information technology, communications and other systems; and
 - unforeseen expenses or delays associated with the transaction; and
- various other risks associated with the merger and the businesses of Lantheus Holdings, Progenics and the combined company described under "Risk Factors," beginning on page 34 of this joint proxy statement/prospectus.

During its consideration of the merger, the Lantheus Holdings Board was also aware that certain of Progenics' directors and executive officers may have interests in the merger that are different from or in addition to those of Progenics stockholders generally, as described in the section entitled "Interests of Progenics' Directors and Executive Officers in the Merger" beginning on page 180 of this joint proxy statement/prospectus.

The Lantheus Holdings Board was also aware of and considered the fee to be paid to SVB Leerink as financial advisor to Lantheus.

The Lantheus Holdings Board determined that, taken as a whole, these potential risks and uncertainties were outweighed by the benefits that the Lantheus Holdings Board expects to achieve for its stockholders as a result of

the merger. The Lantheus Holdings Board realized that there can be no assurance about future results, including results considered or expected as disclosed in the above reasons. The above discussion of the material factors considered by the Lantheus Holdings Board in its consideration of the merger and the other transactions contemplated by the merger agreement is not intended to be exhaustive, but does set forth some of the principal factors considered by the Lantheus Holdings Board. In light of the number and wide variety of factors considered in connection with the evaluation of the merger and the other transactions, the Lantheus Holdings Board did not consider it practicable to, and did not attempt to, quantify or otherwise assign relative weights to the specific factors it considered in reaching its final decision. The Lantheus Holdings Board viewed its position as being based on all of the information available to it and the factors presented to and considered by it. However, some directors may themselves have given different weight to different factors. The factors, potential risks and uncertainties contained in this explanation of Lantheus Holdings' reasons for the merger and other information presented in this section contain information that is forward-looking in nature and, therefore, should be read in light of the factors discussed in "Cautionary Statement Regarding Forward-Looking Statements" beginning on page 66 of this joint proxy statement/prospectus.

THE LANTHEUS HOLDINGS BOARD UNANIMOUSLY RECOMMENDS THAT LANTHEUS HOLDINGS STOCKHOLDERS VOTE "FOR" THE STOCK ISSUANCE PROPOSAL AND "FOR" THE LANTHEUS HOLDINGS ADJOURNMENT PROPOSAL.

Progenics' Reasons for the Merger; Recommendation of the Progenics Board of Directors that Progenics Stockholders Adopt the Merger Agreement

In reaching its decision to approve, and declare advisable, the merger agreement and to recommend that Progenics stockholders adopt the merger agreement, the Progenics Board, as described above in the section entitled "—Background of the Merger and Certain Other Developments" beginning on page 82 of this joint proxy statement/prospectus, held a number of meetings, consulted with Progenics management and its legal and financial advisors and considered a number of factors, including its knowledge of the business, assets and liabilities, results of operations, financial performance, strategic direction and prospects of each of Progenics, Lantheus Holdings and the combined company following the merger (taking into account the results of Progenics' due diligence of Lantheus Holdings), as well as the risks in achieving those prospects and the anticipated effects of the merger. The Progenics Board considered a variety of factors that weighed positively in favor of the merger agreement, the merger and the other transactions contemplated by the merger agreement. These factors included the following, which are not necessarily in order of importance:

Value of Merger Consideration

- the fact that the exchange ratio and consideration for the merger, which is expected to result in Progenics stockholders owning Lantheus Holdings common stock and rights to acquire Lantheus Holdings common stock constituting approximately 35% of the combined company's outstanding shares (on a fully-diluted basis) immediately following the merger, is financially attractive in light of Progenics' standalone value, the relative valuations of Progenics and Lantheus Holdings as discussed with Jefferies, Progenics' recent stock performance, Progenics' strategic alternatives and the potential value of the combined company following the merger, considering its anticipated growth rate and profitability, opportunity for cost savings and revenue enhancements, and other benefits of increased scale following the merger;
- the fact that the exchange ratio is fixed and will not fluctuate based upon changes in the stock price of Progenics or Lantheus Holdings prior to completion of the merger;
- historical information regarding (i) Progenics' business, financial performance and results of operations, (ii) market prices, volatility and trading activity with respect to Progenics' common stock, and (iii) market prices with respect to other industry participants and general market indices;
- current information regarding (i) Progenics' business, prospects, financial condition, operations, technology, products, services, management, competitive position and strategic business goals and objectives,

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- (ii) general economic, industry and financial market conditions, and (iii) opportunities and competitive factors within Progenics' industry;
- (i) historical information regarding Lantheus Holdings' business and financial performance and market prices of Lantheus Holdings common stock and (ii) current information regarding Lantheus Holdings' business, prospects, financial condition, operations, technology, products, services, management and competitive position;
- the prospects and likelihood of realizing superior benefits through remaining an independent company, risks associated with remaining an independent company, and possible alternative business strategies, including potential strategic alternatives discussed with Jefferies and the results of the market-check process conducted by Jefferies at the instruction of the Progenics Board, which resulted in no other parties deciding to pursue this opportunity;
- the Progenics Board's belief, based upon the negotiations with Lantheus Holdings, that the form and the amount of consideration to be paid by Lantheus is the most that Lantheus Holdings was willing to pay for Progenics and that the terms of the merger agreement include the most favorable terms to Progenics to which Lantheus Holdings was willing to agree;
- the Progenics Board considered the financial presentation and opinion, dated October 1, 2019, of Jefferies to the Progenics Board as to the fairness, from a financial point of view and as of such date, of the exchange ratio set forth in the merger agreement, which opinion was based on and subject to various assumptions made, procedures followed, matters considered and limitations and qualifications on the review undertaken as further described under the heading "—Opinion of Progenics' Financial Advisor;" and
- the fact that there are no appraisal rights to stockholders of Progenics in connection with the merger.

Strategic Benefits of Transaction

The Progenics Board's belief regarding the potential long-term strategic benefits of the merger of Progenics with Lantheus Holdings, including:

- the complementary nature of Progenics and Lantheus Holdings as a combined diversified diagnostic and therapeutics company, including leveraging Lantheus Holdings' expertise in complex just-in-time manufacturing systems and commercial execution with Progenics' three leading FDA approved products, pipeline and development capabilities;
- the ability to leverage both Progenics' and Lantheus Holdings' core strengths and the opportunity to create a combined company with a robust portfolio that includes additional precision diagnostics, as well as oncology, nuclear, therapeutic agents and related artificial intelligence software algorithms to assist in imaging interpretation;
- the expectation that the combined company will have cost savings and enhanced profitability compared to Progenics as a standalone entity;
- the information and discussions held with Progenics management and advisors regarding Lantheus Holdings' business, assets, financial condition, results of operations, current business strategy and prospects, including the projections of the long-term financial results of Lantheus Holdings as a standalone company, the size and scale of the combined company and the expected pro forma effect of the proposed merger on the combined company;
- the ability of the combined company to meet patient needs more effectively, while enhancing its ability to continually develop new products that extend its leadership and, through the combination, it will better utilize resources to increase innovation and create greater stockholder value; and
- the expectation that the merger will result in greater long-term value to Progenics stockholders than the potential from other alternatives available to Progenics, including seeking an alternative transaction with

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another third party or remaining an independent public company, in each case, considering the potential for Progenics stockholders to share in any future earnings growth of Progenics' and Lantheus Holdings' businesses, the continued expenses of operating a public company, the overall assessment of the net present value of the risk-adjusted returns that are likely to accrue to Progenics stockholders over the long term, and the ability of Progenics stockholders to attain liquidity should any such stockholder choose not to retain its shares of Lantheus Holdings common stock;

- the fact that the merger is intended to qualify as a "reorganization" within the meaning of Section 368(a) of the Code, and as such generally no gain or loss is expected to be recognized by Progenics stockholders for U.S. federal income tax purposes in connection with the exchange of Progenics common stock for shares of Lantheus Holdings common stock pursuant to the merger;
- the Progenics Board's belief that the terms and conditions of the merger agreement, including the parties' representations, warranties and covenants, deal protection provisions and closing conditions, are reasonable for a transaction of this nature;
- the likelihood of completion of the transactions contemplated by the merger agreement, particularly in light of the terms of the merger agreement and the closing conditions to the merger;
- the Progenics Board's belief that Lantheus Holdings' senior management team is highly skilled and capable of managing the combined company and achieving the long-term value being sought by Progenics and Lantheus Holdings stockholders; and
- Progenics' right to appoint to the Lantheus Holdings Board one member of the Progenics Board in connection with the completion of the merger.

Likelihood of Completion

- the restrictions the merger agreement imposes on Lantheus Holdings with respect to soliciting competing bids and the fact that Lantheus Holdings may be obligated to pay the Lantheus Holdings termination fee of \$18,340,000 to Progenics; and
- the fact that, under the terms of the merger agreement, Lantheus Holdings has agreed to use its reasonable best efforts to take, or cause to be taken, all things necessary, proper or advisable under applicable law to complete the merger and the other transactions contemplated by the merger agreement as promptly as practicable.

Terms of Merger Agreement

- the merger is subject to the approval of Progenics and Lantheus Holdings respective stockholders, who are free to approve or reject the merger;
- the merger permits Progenics, subject to certain conditions, to respond to and negotiate unsolicited acquisition proposals prior to the time that Progenics stockholders approve the merger and to terminate the merger agreement to accept an unsolicited acquisition proposal that the Progenics Board determines is superior to the merger;
- the merger permits Lantheus Holdings, subject to certain conditions, to respond to and negotiate unsolicited acquisition proposals prior to the time that Lantheus Holdings stockholders approve the stock issuance and to terminate the merger agreement to accept an unsolicited acquisition proposal that the Lantheus Holdings Board determines is superior to the merger;
- under certain circumstances under the merger agreement, Lantheus Holdings may be required to pay Progenics the Lantheus Holdings termination fee, as more fully described in "The Merger Agreement—Termination Fee and Expenses."

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The Progenics Board also considered a variety of risks and other potentially negative factors concerning the merger. These factors included the following, which are not necessarily listed in order of importance:

- the potential risk of diverting Progenics management's attention and resources from the operation of Progenics' business and towards completion of the merger;
- the possibility that the merger might not be completed and the potential effects of the public announcement and pendency of the merger on management's attention and on the reputation of Progenics, Progenics' relationships with patients, suppliers and other constituencies;
- the risks associated with integrating businesses upon completion of the merger, including risks of employee disruption, risks relating to melding of company cultures and retention risks relating to key employees;
- the possibility that the strategic, operational and financial benefits and stock price performance anticipated in connection with the merger might not be realized, or would take longer to realize than expected, by the combined company, including that the anticipated synergies resulting from the merger might not be achieved and/or reflected in the trading price of the Lantheus Holdings common stock following the completion of the merger;
- the fact that no cash consideration is being paid in connection with the merger and that the exchange ratio is fixed, so if Lantheus Holdings' stock price declines, and does not recover prior to the effective time of the merger, the value of consideration received by Progenics stockholders in connection with the merger would also decline;
- the risk that the merger might not be completed (or such completion may not occur in a timely manner), including the risks that the trading price of Progenics common stock could be adversely affected, Progenics would have incurred substantial transaction and opportunity costs and Progenics business might be subject to substantial disruptions and delays that could adversely impact its business plan and prospects;
- the restrictions the merger agreement imposes on soliciting competing bids and the fact that Progenics may be obligated to pay the Progenics termination fee of \$18,340,000 or reimburse expenses of Lantheus Holdings if the merger agreement is terminated if Progenics stockholders do not adopt the merger agreement and the possibility that the termination fee could potentially deter third parties from making a competing bid to acquire Progenics prior to the closing of the merger, and could impact Progenics' ability to engage in another strategic transaction for twelve months if the merger agreement is terminated in certain circumstances;
- the fact that if Progenics willfully and materially breaches the merger agreement it may need to pay Lantheus the willful breach damages payment of \$18,340,000 upon any termination of the merger agreement (other than a termination in which Progenics is paying Lantheus a termination fee);
- the fact that all known interests of directors and executive officers of Progenics in the merger that may be different from, or in addition to, their interests as stockholders of Progenics or the interests of Progenics' other stockholders generally, including, without limitation, that Bradley L. Campbell is currently expected to serve as a member of the Lantheus Holdings Board following completion of the merger;
- the risks involved with the required vote and approval of both the Progenics and the Lantheus Holdings stockholders in favor of the merger and the transactions contemplated by the merger agreement;
- the regulatory and other approvals required in connection with the merger and the risk that such regulatory approvals will not be received in a timely manner or at all, or may impose unacceptable conditions;
- the restrictions in the merger agreement on the conduct of Progenics' business prior to the completion of the merger, which may delay or prevent Progenics from undertaking business opportunities that may arise prior to the completion of the merger; and

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- other various risks associated with the merger and the business of Progenics, Lantheus and the combined company, as described in the section entitled “Risk Factors.”

The foregoing discussion of the information and factors considered by the Progenics Board is not meant to be exhaustive but includes the material factors considered by the Progenics Board. In view of the variety of factors considered in connection with its evaluation of the merger, the Progenics Board did not find it practicable to, and did not, quantify or otherwise assign relative weights to the specific factors considered in reaching its determination and recommendation. In addition, individual directors may have given different weights to different factors. The Progenics Board recommends the adoption of the merger agreement based upon the totality of the information it considered.

The foregoing description of the Progenics Board’s consideration of the factors supporting the merger agreement, the merger and the other transactions contemplated by the merger agreement is forward-looking in nature. This information should be read in light of the factors discussed in the section entitled “Cautionary Statement Regarding Forward-Looking Statements” beginning on page 66 of this joint proxy statement/prospectus.

THE PROGENICS BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT PROGENICS STOCKHOLDERS VOTE “FOR” THE MERGER AGREEMENT PROPOSAL, “FOR” THE PROGENICS ADJOURNMENT PROPOSAL AND “FOR” THE PROGENICS COMPENSATION ADVISORY PROPOSAL.

Opinion of Lantheus Holdings’ Financial Advisor

Introduction

Lantheus Holdings retained SVB Leerink as its financial advisor in connection with the merger and the other transactions contemplated by the merger agreement, which are referred to throughout this section, collectively, as the “Transaction”. In connection with this engagement, Lantheus Holdings requested that SVB Leerink evaluate the fairness, from a financial point of view, to Lantheus Holdings of the exchange ratio provided for in the merger agreement, which is referred to throughout this section as the “Exchange Ratio”. On October 1, 2019, SVB Leerink rendered to the Lantheus Holdings Board its oral opinion, which was subsequently confirmed by delivery of a written opinion dated October 1, 2019 that, as of such date and based upon and subject to the various assumptions, qualifications and limitations upon the review undertaken by SVB Leerink in preparing its opinion, the Exchange Ratio provided for in the merger agreement was fair, from a financial point of view, to Lantheus Holdings.

The full text of SVB Leerink’s written opinion, dated October 1, 2019, which describes the assumptions made and limitations upon the review undertaken by SVB Leerink in preparing its opinion, is attached as Annex B and is incorporated herein by reference. The summary of SVB Leerink’s written opinion set forth below is qualified in its entirety by the full text of the written opinion attached as Annex B. **SVB Leerink’s financial advisory services and opinion were provided for the information and assistance of the Lantheus Holdings Board (in their capacity as directors and not in any other capacity) in connection with and for purposes of its consideration of the Transaction and SVB Leerink’s opinion addressed only the fairness, from a financial point of view, as of the date thereof, to Lantheus Holdings of the Exchange Ratio provided for in the merger agreement. SVB Leerink’s opinion did not address any other term or aspect of the merger agreement or the Transaction and does not constitute a recommendation to any stockholder of Lantheus Holdings as to whether or how such holder should vote with respect to the merger or otherwise act with respect to the Transaction or any other matter.**

The full text of SVB Leerink’s written opinion should be read carefully in its entirety for a description of the assumptions made and limitations upon the review undertaken by SVB Leerink in preparing its opinion.

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In connection with rendering the opinion described above and performing its related financial analyses, SVB Leerink reviewed, among other things:

- a draft of the merger agreement, dated October 1, 2019;
- the Annual Reports on Form 10-K for the fiscal year ended December 31, 2018, as filed by each of Lantheus Holdings and Progenics with the SEC;
- the Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2019 and June 30, 2019, as filed by each of Lantheus Holdings and Progenics with the SEC;
- certain Current Reports on Form 8-K, as filed by each of Lantheus Holdings and Progenics with, or furnished by each of Lantheus Holdings and Progenics to, the SEC;
- certain publicly available research analyst reports for each of Lantheus Holdings and Progenics;
- certain financial forecasts and other information and data relating to each of Lantheus Holdings and Progenics prepared by management of Lantheus Holdings and furnished to us by Lantheus Holdings for purposes of SVB Leerink's analysis, which are referred to in this section as the "Lantheus Management Forecasts."

SVB Leerink conducted discussions with members of the senior management and representatives of Lantheus Holdings regarding their assessment of the Lantheus Management Forecasts. In addition, SVB Leerink reviewed (i) the historical trading prices and trading activity for the Lantheus Holdings common stock and the Progenics common stock and (ii) publicly available market capitalization data regarding companies in the biopharmaceutical industry that SVB Leerink believed to be comparable in certain respects to each of Lantheus Holdings and Progenics. SVB Leerink also conducted such other financial studies and analyses and took into account such other information as it deemed appropriate.

SVB Leerink assumed, without independent verification or any responsibility therefor, the accuracy and completeness of the financial, legal, regulatory, tax, accounting and other information supplied to, discussed with, or reviewed by it for purposes of its opinion and, with the consent of the Lantheus Holdings Board, relied upon such information as being complete and accurate. In that regard, SVB Leerink assumed, with the consent of the Lantheus Holdings Board, that the Lantheus Management Forecasts had been reasonably prepared on bases reflecting the best currently available estimates and judgments of the management of Lantheus Holdings as to the matters covered thereby. SVB Leerink relied, at the direction of the Lantheus Holdings Board, on the Lantheus Management Forecasts for purposes of its analysis and its opinion. SVB Leerink expressed no view or opinion as to the Lantheus Management Forecasts or the assumptions on which they were based. In addition, with the consent of the Lantheus Holdings Board, SVB Leerink did not make any independent evaluation or appraisal of any of the assets or liabilities (contingent, derivative, off-balance-sheet or otherwise) of Lantheus Holdings or Progenics, nor was SVB Leerink furnished with any such evaluation or appraisal, and SVB Leerink was not asked to conduct, and did not conduct, a physical inspection of the properties or assets of Lantheus Holdings or Progenics. SVB Leerink assumed, with the consent of the Lantheus Holdings Board, that the final executed merger agreement would not differ in any respect material to its analysis or its opinion from the last draft of the merger agreement reviewed by SVB Leerink. SVB Leerink also assumed, with the consent of the Lantheus Holdings Board, that the Transaction would be consummated on the terms set forth in the merger agreement and in accordance with all applicable laws and other relevant documents or requirements, without delay or the waiver, modification or amendment of any term, condition or agreement, the effect of which would be material to SVB Leerink's analysis or its opinion and that, in the course of obtaining the necessary governmental, regulatory and other approvals, consents, releases and waivers for the Transaction, no delay, limitation, restriction, condition or other change would be imposed, the effect of which would be material to such analysis or opinion. SVB Leerink did not evaluate and did not express any opinion as to the solvency or fair value of Lantheus Holdings or Progenics, or their respective abilities to pay their obligations when they come due, or as to the impact of the Transaction on such matters, under any state, federal or other laws relating to bankruptcy, insolvency or similar matters. SVB Leerink are not legal, regulatory, tax or accounting advisors, and SVB Leerink expressed no opinion as to any legal, regulatory, tax or accounting matters.

SVB Leerink expressed no view as to, and its opinion did not address, Lantheus Holdings' underlying business decision to proceed with or effect the Transaction, or the relative merits of the Transaction as compared to any alternative business strategies or transactions that might be available to Lantheus Holdings or in which Lantheus Holdings might engage. SVB Leerink's opinion was limited to and addressed only the fairness, from a financial point of view, as of the date thereof, to Lantheus Holdings of the Exchange Ratio provided for in the merger agreement. SVB Leerink was not asked to, nor did SVB Leerink, express any view on, and its opinion did not address, any other term or aspect of the merger agreement or the Transaction, including, without limitation, the structure or form of the Transaction, or any other agreements or arrangements contemplated by the merger agreement or entered into in connection with or otherwise contemplated by the Transaction, including, without limitation, the fairness of the Transaction or any other term or aspect of the Transaction to, or any consideration to be received in connection therewith by, or the impact of the Transaction on, the holders of any class of securities, creditors or other constituencies of Lantheus Holdings or any other party. In addition, SVB Leerink expressed no view or opinion as to the fairness (financial or otherwise) of the amount, nature or any other aspect of any compensation to be paid or payable to any of the officers, directors or employees of Lantheus Holdings or any other party, or class of such persons in connection with the Transaction, whether relative to the Exchange Ratio or otherwise. SVB Leerink's opinion was necessarily based on financial, economic, monetary, currency, market and other conditions and circumstances as in effect on, and the information made available to it as of, the date of its opinion, and SVB Leerink does not have any obligation or responsibility to update, revise or reaffirm its opinion based on circumstances, developments or events occurring after the date of the opinion. SVB Leerink's opinion does not constitute a recommendation to any stockholder of Lantheus Holdings as to whether or how such holder should vote with respect to the merger or otherwise act with respect to the Transaction or any other matter. SVB Leerink provided its financial advisory services and rendered its opinion for the information and assistance of the Lantheus Holdings Board (in their capacity as directors and not in any other capacity) in connection with and for purposes of its consideration of the Transaction. The issuance of SVB Leerink's opinion was approved by the SVB Leerink Fairness Opinion Review Committee.

Summary of Financial Analyses

The following is a summary of the material financial analyses prepared by SVB Leerink and reviewed with the Lantheus Holdings Board in connection with the rendering by SVB Leerink of its opinion on October 1, 2019. The summary set forth below does not purport to be a complete description of the financial analyses performed or factors considered by, and underlying the opinion of, SVB Leerink, nor does the order of the financial analyses described represent the relative importance or weight given to those financial analyses by SVB Leerink. SVB Leerink may have deemed various assumptions more or less probable than other assumptions, so the reference ranges resulting from any particular portion of the analyses summarized below should not be taken to be the view of SVB Leerink as to the actual values of Lantheus Holdings or Progenics. Some of the summaries of the financial analyses set forth below include information presented in tabular format. In order to fully understand the financial analyses, the tables must be read together with the text of each summary, as the tables alone do not constitute a complete description of the financial analyses performed by SVB Leerink. Considering the data in the tables below without considering all financial analyses or factors or the full narrative description of such analyses or factors, including the methodologies and assumptions underlying such analyses or factors, could create a misleading or incomplete view of the processes underlying SVB Leerink's financial analyses and its opinion. In performing its analyses, SVB Leerink made numerous assumptions with respect to industry performance, general business and economic conditions and other matters, many of which are beyond the control of Lantheus Holdings or any other parties to the Transaction. None of Lantheus Holdings, Progenics, Merger Sub, SVB Leerink or any other person assumes responsibility if future results are materially different from those discussed. Any estimates contained in these analyses are not necessarily indicative of actual values or predictive of future results or values, which may be significantly more or less favorable than as set forth below. In addition, analyses relating to the value of Lantheus Holdings or Progenics do not purport to be appraisals or reflect the prices at which these companies may actually be sold. Accordingly, the assumptions and estimates used in, and the results derived from, the financial analyses are inherently subject to substantial uncertainty. Except as otherwise noted, the following quantitative information, to the extent that it is based on market data, is based on

market data as it existed on or before October 1, 2019 and is not necessarily indicative of current market conditions.

Lantheus Holdings Stand-Alone Valuation Analyses

Publicly Traded Company Analysis

SVB Leerink reviewed and compared certain financial information for Lantheus Holdings to corresponding financial information for the following publicly traded, commercial-stage specialty pharmaceutical companies that SVB Leerink deemed comparable, based on its experience and professional judgment, to Lantheus Holdings:

- Amphastar Pharmaceuticals, Inc.
- Eagle Pharmaceuticals, Inc.
- Emergent BioSolutions Inc.
- Mayne Pharma Group Limited
- Pacira BioSciences, Inc.
- Supernus Pharmaceuticals, Inc.

Although none of the selected companies is directly comparable to Lantheus Holdings, the companies listed above were chosen by SVB Leerink, among other reasons, because they are or were publicly-traded, commercial-stage specialty pharmaceutical companies with certain operational, business and/or financial characteristics that, for purposes of SVB Leerink's analysis, may be considered similar to those of Lantheus Holdings. SVB Leerink calculated and compared financial multiples for the selected companies based on information obtained from public filings, FactSet (a data source containing historical and estimated financial data) and other Wall Street research. With respect to each of the selected companies, SVB Leerink calculated enterprise value (calculated as the market value of common equity (determined using the treasury stock method and taking into account outstanding in-the-money options, warrants, RSUs and other convertible securities), plus the book value of debt and certain liabilities (excluding any contingent consideration) less cash and cash equivalents) as a multiple of Wall Street research analyst consensus estimated net revenue for calendar year 2021.

The results of this analysis are summarized as follows:

	<u>EV/2021E Net Revenue</u>
Pacira BioSciences, Inc.	3.3x
Eagle Pharmaceuticals, Inc.	3.1x
Emergent BioSolutions Inc.	2.6x
Amphastar Pharmaceuticals, Inc.	2.0x
Supernus Pharmaceuticals, Inc.	2.0x
Mayne Pharma Group Limited	1.8x
	<u>EV/2021E Net Revenue</u>
75 th Percentile	3.0x
Mean	2.5x
Median	2.3x
25 th Percentile	2.0x

Based on the foregoing and other considerations that SVB Leerink deemed relevant in its professional judgment and expertise, SVB Leerink applied a multiple range of: (i) 2.0x to 3.0x, derived from the Wall Street consensus estimated 2021 net revenue of the selected publicly traded companies, to Lantheus Holdings' estimated 2021 net

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revenue derived from the Lantheus Management Forecasts, which resulted in an implied per share equity value range for the Lantheus Holdings common stock of approximately \$17.65 to \$28.15 as compared to the closing price of the Lantheus Holdings common stock of \$25.07 as of September 30, 2019 and \$24.03 as of October 1, 2019.

Discounted Cash Flow Analysis

A discounted cash flow analysis is a traditional valuation methodology used to derive a valuation of an asset or set of assets by calculating the “present value” of estimated future cash flows of the asset or set of assets. “Present value” refers to the current value of future cash flows or amounts and is obtained by discounting those future cash flows or amounts by a discount rate that takes into account macroeconomic assumptions and estimates of risk, the opportunity cost of capital, expected returns and other appropriate factors. SVB Leerink performed a discounted cash flow analysis to calculate the estimated present value of the stand-alone, unlevered, after-tax free cash flows that Lantheus Holdings was forecasted to generate from October 1, 2019 (the Transaction announcement date) through fiscal year 2023, which unlevered, after-tax free cash flows were derived from the Lantheus Management Forecasts. SVB Leerink calculated terminal values for Lantheus Holdings by applying perpetuity growth rates of between 0.0% to 1.0%, which SVB Leerink based on its experience and professional judgment, given the nature of Lantheus Holdings and its business and the industries in which it operates, to estimated 2023 unlevered, after-tax free cash flows. The cash flows and terminal values were then discounted to present value as of October 1, 2019 using discount rates ranging from 8.0% to 10.0%. This range of discount rates was based on SVB Leerink’s analysis of Lantheus Holdings’ weighted average cost of capital derived from analyzing the cost of capital for Lantheus Holdings’ comparable companies and taking into account certain metrics including the comparable companies’ levered and unlevered betas, a historical equity risk premium, size premia and yields for U.S. treasury notes. In performing its discounted cash flow analysis, SVB Leerink adjusted for (i) cash balances, including cash and cash equivalents, estimated by Lantheus Holdings management to equal approximately \$70.5 million as of September 30, 2019, (ii) term loans, estimated by Lantheus Holdings management to equal approximately \$200.0 million as of September 30, 2019, and (iii) the estimated cash flow impact of Lantheus Holdings’ available net operating loss carryforwards and other tax attributes.

This analysis resulted in an implied per share equity value for the Lantheus Holdings common stock of approximately \$24.10 to \$35.30 as compared to the closing price of the Lantheus Holdings common stock of \$25.07 as of September 30, 2019 and \$24.03 as of October 1, 2019.

Lantheus Holdings 52-Week Trading Range

SVB Leerink noted for the information of the Lantheus Holdings Board the historical closing trading prices of the Lantheus Holdings common stock during the 52-week period ended September 30, 2019 (the last trading day prior to the rendering of SVB Leerink’s fairness opinion), which reflected low and high stock closing prices for the Lantheus Holdings common stock during such period of approximately \$12.59 to \$29.80 per share.

Progenics Stand-Alone Valuation Analyses

Publicly Traded Company Analysis

SVB Leerink reviewed and compared certain financial information for Progenics to corresponding financial information for the following publicly traded orphan and oncology companies that SVB Leerink deemed comparable, based on its experience and professional judgment, to Progenics:

- Agios Pharmaceuticals, Inc.
- Athenex, Inc.
- Karyopharm Therapeutics Inc.

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- Spectrum Pharmaceuticals, Inc.
- Telix Pharmaceuticals Limited
- Zogenix, Inc.

Although none of the selected companies is directly comparable to Progenics, the companies listed above were chosen by SVB Leerink, among other reasons, because they are publicly traded orphan and oncology companies with certain operational, business and/or financial characteristics that, for purposes of SVB Leerink's analysis, may be considered similar to those of Progenics. SVB Leerink calculated and compared financial multiples for the selected companies based on information obtained from public filings, FactSet (a data source containing historical and estimated financial data) and other Wall Street research. With respect to each of the selected companies, SVB Leerink calculated enterprise value (calculated as the market value of common equity (determined using the treasury stock method and taking into account outstanding in-the-money options, warrants, RSUs and other convertible securities), plus the book value of debt and certain liabilities (excluding any contingent consideration) less cash and cash equivalents) as a multiple of publicly available FactSet consensus net revenue estimates for calendar year 2021.

The results of this analysis are summarized as follows:

	<u>EV/2021E Net Revenue</u>
Telix Pharmaceuticals Limited	8.4x
Zogenix, Inc.	6.1x
Spectrum Pharmaceuticals, Inc.	5.5x
Athenex, Inc.	4.7x
Agios Pharmaceuticals, Inc.	4.1x
Karyopharm Therapeutics Inc.	3.8x
	<u>EV/2021E Net Revenue</u>
75 th Percentile	6.0x
Mean	5.4x
Median	5.1x
25 th Percentile	4.3x

Based on the foregoing and other considerations that SVB Leerink deemed relevant in its professional judgment and expertise, SVB Leerink applied a multiple range of: (i) 4.3x to 6.0x, derived from the Wall Street consensus estimated 2021 net revenue of the selected publicly traded companies, against Progenics' estimated 2021 net revenue derived from the Lantheus Management Forecasts, which resulted in an implied per share equity value range for the Progenics common stock of approximately \$3.35 to \$4.60. SVB Leerink compared this range to the closing prices of Progenics common stock of \$5.06 as of September 30, 2019 and \$4.95 as of October 1, 2019 and as well as the implied Transaction value of \$6.01 per share of Progenics common stock based on the Exchange Ratio.

Sum-of-the-Parts Discounted Cash Flow Analysis

SVB Leerink performed an illustrative sum-of-the-parts discounted cash flow analysis to calculate the estimated present value of the stand-alone, unlevered, after-tax free cash flows that Progenics was forecasted to generate from October 1, 2019 (the Transaction announcement date) through fiscal year 2036, which stand-alone, unlevered, after-tax free cash flows were derived from the Lantheus Management Forecasts.

In connection with this analysis, SVB Leerink performed separate discounted cash flow analyses with respect to the following products (and indications specified by the Lantheus Management Forecasts) of Progenics:

- AZEDRA® (Pheochromocytoma and Paraganglioma, Neuroblastoma and GEP-NET indications)

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- PyL™ (Biochemical Recurrence and Risk Stratification indications); and
- 1095.

For purposes of this analysis, SVB Leerink utilized probability of success adjusted estimates based on the Lantheus Management Forecasts of the free cash flows to be generated from the Neuroblastoma and GEP-NET indications for AZEDRA®, both PyL™ indications referred to above and from 1095, in each case for the period from October 1, 2019 to December 31, 2036 (except with respect to PyL™, for which the period was from September 30, 2019 to December 31, 2032).

In addition, SVB Leerink (i) performed separate discounted cash flow analyses of the estimated royalty payments and milestone payments to be received by Progenics from sales of RELISTOR® for the period from October 1, 2019 to December 31, 2030 pursuant to Progenics' partnership with a third party and (ii) performed a separate discounted cash flow analysis of estimates of corporate costs of Progenics reflected in the Lantheus Management Forecasts that had not been allocated to specific product candidates, including research and development and general and administrative expenses.

SVB Leerink calculated terminal values for the foregoing items by applying perpetuity growth rates of between (10.0%) to 0.0%, which SVB Leerink estimated based on its professional judgment and experience, given the nature of Progenics and its business, the industries in which it operates, and the risk of generic entry, to 2036 projected revenue, except that no terminal value was ascribed to RELISTOR® or PyL™. The cash flows and terminal values were then discounted to present value as of October 1, 2019 using discount rates ranging from 10.0% to 12.0%. This range of discount rates was based on SVB Leerink's analysis of Progenics' weighted average cost of capital derived from analyzing the cost of capital for Progenics' comparable companies and taking into account certain metrics including the comparable companies' levered and unlevered betas, a historical equity risk premium, size premia and yields for U.S. treasury notes. From the foregoing analyses, SVB Leerink derived a range of illustrative equity values for each product candidate and for Progenics' share of partnership revenues, and a range of negative illustrative present values for Progenics' unallocated corporate costs. In performing its sum-of-the-parts discounted cash flow analysis, SVB Leerink adjusted for (i) cash balances, including cash and cash equivalents, estimated by Progenics management to equal approximately \$62 million as of September 30, 2019, (ii) royalty loans, estimated by Progenics management to equal approximately \$42 million as of September 30, 2019, and (iii) the estimated cash flow impact of Progenics' available net operating loss carryforwards and other tax attributes.

This analysis resulted in an implied per share equity value for the Progenics common stock of approximately \$6.20 to \$7.90. SVB Leerink compared this range to the closing prices of Progenics common stock of \$5.07 as of September 30, 2019 and \$4.95 as of October 1, 2019 as well as the implied Transaction value of \$6.01 per share of Progenics common stock based on the Exchange Ratio.

Subsequent to the preparation of SVB Leerink's financial analyses, Progenics' financial advisor notified SVB Leerink that Progenics management had revised its estimate of Progenics' September 30, 2019 cash balance, including cash and cash equivalents, from approximately \$62 million to approximately \$66 million. SVB Leerink reviewed this change with the Lantheus Holdings Board during its October 1, 2019 presentation. In addition, subsequent to the delivery of its fairness opinion, SVB Leerink determined that its illustrative sum-of-the-parts discounted cash flow analysis of Progenics understated estimated free cash flows for RELISTOR® and PyL™ and overstated estimated negative free cash flows for Progenics' overhead expense. These adjustments result in an implied per share equity value for Progenics common stock of approximately \$6.50 to \$8.15, compared to the implied per share equity value for the Progenics common stock of approximately \$6.20 to \$7.90 presented to the Lantheus Holdings Board on October 1, 2019. SVB Leerink informed the Lantheus Holdings Board of these adjustments, none of which affects SVB Leerink's determination as to the fairness of the Exchange Ratio.

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Progenics 52-week Trading Range

SVB Leerink noted for the information of the Lantheus Holdings Board the historical closing trading prices of the Progenics common stock during the 52-week period ended September 30, 2019 (the last trading day prior to the rendering of SVB Leerink's fairness opinion), which reflected low and high stock closing prices for the Progenics common stock during such period of approximately \$3.42 to \$6.54 per share.

Exchange Ratio Analysis

Publicly Traded Companies

SVB Leerink compared the results for Lantheus Holdings to the results for Progenics with respect to the publicly traded company analyses described above.

SVB Leerink compared the lowest equity value per share for Progenics to the highest equity value per share for Lantheus Holdings to derive the lowest Progenics exchange ratio implied by each pair of results. SVB Leerink also compared the highest equity value per share for Progenics to the lowest equity value per share for Lantheus Holdings to derive the highest Progenics exchange ratio implied by each pair of results. The lowest and highest implied Progenics exchange ratios resulting from this analysis were 0.1190x and 0.2606x, respectively, compared to the Exchange Ratio of 0.2502x.

Discounted Cash Flow Analysis

SVB Leerink compared the results for Lantheus Holdings to the results for Progenics with respect to the discounted cash flow analyses described above.

SVB Leerink compared the lowest equity value per share for Progenics to the highest equity value per share for Lantheus Holdings to derive the lowest Progenics exchange ratio implied by each pair of results. SVB Leerink also compared the highest equity value per share for Progenics to the lowest equity value per share for Lantheus Holdings to derive the highest Progenics exchange ratio implied by each pair of results. The lowest and highest implied Progenics exchange ratios resulting from this analysis were 0.1756x and 0.3278x, respectively, compared to the Exchange Ratio of 0.2502x. After taking into account the adjustments to its illustrative sum-of-the-parts discounted cash flow analysis of Progenics described above, the lowest and highest implied Progenics exchange ratios were 0.1841x and 0.3382x, respectively.

52-Week Exchange Ratio Range

SVB Leerink calculated the range of Progenics exchange ratios for the 52-week period ended October 1, 2019 based upon the relative closing prices of Lantheus Holdings common stock and Progenics common stock for each trading day during such period. The lowest and highest Progenics exchange ratios resulting from this analysis were 0.1499x and 0.4227x, respectively, compared to the Exchange Ratio of 0.2502x.

General

The preparation of a fairness opinion is a complex analytical process involving various determinations as to the most appropriate and relevant methods of financial analysis and the application of those methods to the particular circumstances and, therefore, a fairness opinion is not readily susceptible to summary description. In arriving at its opinion, SVB Leerink did not draw, in isolation, conclusions from or with regard to any factor or analysis that it considered. Rather, SVB Leerink made its determination as to fairness on the basis of its experience and professional judgment after considering the results of all of the analyses.

SVB Leerink's financial analyses and opinion were only one of many factors taken into consideration by the Lantheus Holdings Board in its evaluation of the Transaction. Consequently, the analyses described above should

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not be viewed as determinative of the views of the Lantheus Holdings Board or management of Lantheus Holdings with respect to the Exchange Ratio or as to whether the Lantheus Holdings Board would have been willing to determine that a different Exchange Ratio was fair. The Exchange Ratio was determined through arm's-length negotiations between Lantheus Holdings and Progenics and was approved by the Lantheus Holdings Board. SVB Leerink provided advice to Lantheus Holdings during these negotiations. However, SVB Leerink did not recommend any specific Exchange Ratio or other financial terms to Lantheus Holdings or the Lantheus Holdings Board or that any specific Exchange Ratio or other financial terms constituted the only appropriate consideration for the Transaction.

SVB Leerink LLC is a full-service securities firm engaged in securities trading and brokerage activities as well as investment banking and financial advisory services. Except with respect to the Transaction, in the past two years, SVB Leerink has not been engaged to provide financial advisory services or other services to Lantheus Holdings for which it has received compensation and, except as described below, has not received any compensation from Lantheus Holdings during such period. In the past two years, SVB Leerink has not been engaged to provide financial advisory or other services to Progenics and has not received any compensation from Progenics during such period. In the past two years, SVB Leerink has provided certain investment banking and financial advisory services to businesses affiliated with Mr. Venkataraman, Managing Partner of Velan, for which SVB Leerink has received compensation of \$4.5 million in aggregate. In addition, SVB Leerink is serving as a lead bookrunner for the proposed initial public offering of a special purpose acquisition vehicle of which an affiliate of Mr. Venkataraman is a sponsor and expects to receive customary compensation for such services. Based upon information filed with the SEC, as of October 1, 2019, Velan and its affiliates owned 8,011,733 shares of Progenics common stock, representing approximately 9.3% of the outstanding Progenics common stock as of such date. In the ordinary course of business, SVB Leerink and its affiliates may, in the future, provide commercial and investment banking services to Lantheus Holdings, Progenics, Velan or their respective affiliates and would expect to receive customary fees for the rendering of such services. In the ordinary course of their trading and brokerage activities, SVB Leerink or its affiliates have in the past and may in the future hold positions, for their own account or the accounts of their customers, in equity, debt or other securities of Lantheus Holdings, Progenics, Velan or their respective affiliates. Consistent with applicable legal and regulatory requirements, SVB Leerink has adopted policies and procedures to establish and maintain the independence of its research departments and personnel. As a result, SVB Leerink's research analysts may hold views, make statements or investment recommendations and/or publish research reports with respect to Lantheus Holdings and the Transaction and other participants in the Transaction that differ from the views of SVB Leerink's investment banking personnel.

The Lantheus Holdings Board selected SVB Leerink to act as Lantheus Holdings' financial advisor based on SVB Leerink's qualifications, reputation, experience and expertise in the biopharmaceutical industry, its knowledge of and involvement in recent transactions in the biopharmaceutical industry and its relationship and familiarity with Lantheus Holdings and its business. SVB Leerink is an internationally recognized investment banking firm that has substantial experience in transactions similar to the Transaction.

In connection with SVB Leerink's services as a financial advisor to Lantheus Holdings, Lantheus Holdings has agreed to pay SVB Leerink an aggregate fee of \$5.0 million, \$1.125 million of which was paid upon the rendering by SVB Leerink of its opinion and the remainder of which is payable contingent upon consummation of the Transaction. In addition, Lantheus Holdings has agreed to reimburse certain of SVB Leerink's expenses arising, and to indemnify SVB Leerink against certain liabilities that may arise, out of SVB Leerink's engagement. The terms of the fee arrangement between SVB Leerink and Lantheus Holdings, which are customary in transactions of this nature, were negotiated at arm's length between SVB Leerink and Lantheus Holdings, and the Lantheus Holdings Board was aware of the arrangement, including the fact that a significant portion of the fee payable to SVB Leerink is contingent upon the completion of the Transaction.

Opinion of Progenics' Financial Advisor

Progenics retained Jefferies as financial advisor in connection with a possible sale, disposition or certain other business transactions involving Progenics. In connection with this engagement, the Progenics Board requested that Jefferies evaluate the fairness, from a financial point of view, of the exchange ratio set forth in the merger agreement. At a meeting of the Progenics Board held on October 1, 2019 to evaluate the merger, Jefferies rendered an oral opinion, confirmed by delivery of a written opinion dated October 1, 2019, to the Progenics Board to the effect that, as of that date and based on and subject to various assumptions made, procedures followed, matters considered and limitations and qualifications on the review undertaken as described in its opinion, the exchange ratio set forth in the merger agreement was fair, from a financial point of view, to the holders of Progenics common stock.

The full text of Jefferies' opinion, which describes various assumptions made, procedures followed, matters considered and limitations and qualifications on the review undertaken by Jefferies, is attached as Annex C to this joint proxy statement/prospectus and is incorporated herein by reference. Jefferies' opinion was provided for the use and benefit of the Progenics Board (in its capacity as such) in its consideration of the merger. Jefferies' opinion did not address the relative merits of the merger as compared to any alternative transaction or opportunity that might be available to Progenics, nor did it address the underlying business decision by Progenics to engage in the merger or the terms of the merger agreement or the documents referred to therein. Jefferies' opinion did not constitute a recommendation as to how any holder of Progenics common stock should vote with respect to the merger or any matter related thereto. The following summary is qualified in its entirety by reference to the full text of Jefferies' opinion.

In arriving at its opinion, Jefferies, among other things:

- reviewed a draft dated October 1, 2019 of the merger agreement;
- reviewed certain publicly available financial and other information about Progenics and Lantheus Holdings;
- reviewed certain information furnished to Jefferies and approved for Jefferies' use by Progenics management, including probability-weighted financial forecasts and analyses, relating to the business, operations and prospects of Progenics (the "Progenics financial projections," as defined and summarized in the section titled "—Certain Unaudited Prospective Financial Information" beginning on page 138 of this joint proxy statement/prospectus);
- reviewed certain information furnished to Jefferies and approved for Jefferies' use by Progenics management, including financial forecasts and analyses, relating to the business, operations and prospects of Lantheus Holdings (the "Progenics management Lantheus financial projections," as defined and summarized in the section titled "—Certain Unaudited Prospective Financial Information" beginning on page 138 of this joint proxy statement/prospectus);
- reviewed certain information furnished to Jefferies by Lantheus Holdings management, including financial forecasts and analyses, relating to the business, operations and prospects of Lantheus Holdings (as used in this section of this joint proxy statement/prospectus, the "Lantheus Holdings—Lantheus financial projections");
- reviewed certain information furnished to Jefferies by Lantheus Holdings management, including financial forecasts and analyses, relating to the business, operations and prospects of Progenics (as used in this section of this joint proxy statement/prospectus, the "Lantheus Holdings—Lantheus Progenics financial projections");
- discussed or reviewed with members of senior management of Progenics the matters described in the second, third and fourth bullets above, and discussed or reviewed with members of senior management of Lantheus Holdings the matters described in the second, fifth and sixth bullets above;

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- reviewed the relative contributions of Progenics and Lantheus Holdings to the combined company on a pro forma basis;
- reviewed the share trading price history and valuation multiples for Progenics common stock and Lantheus Holdings common stock and compared them with those of certain publicly traded companies that Jefferies deemed relevant; and
- conducted such other financial studies, analyses and investigations as Jefferies deemed appropriate.

In its review and analysis and in rendering its opinion, Jefferies assumed and relied upon, but did not assume any responsibility to independently investigate or verify, the accuracy and completeness of all financial and other information that was supplied or otherwise made available by Progenics or Lantheus Holdings or that was publicly available to Jefferies (including, without limitation, the information described above) or that was otherwise reviewed by Jefferies. Jefferies relied on assurances of the management of Progenics that it was not aware of any facts or circumstances that would make such information inaccurate or misleading. In its review, Jefferies did not obtain an independent evaluation or appraisal of any of the assets or liabilities of, nor did Jefferies conduct a physical inspection of any of the properties or facilities, of Progenics or Lantheus Holdings, nor was Jefferies furnished with any such evaluations or appraisals, nor did Jefferies assume any responsibility to obtain any such evaluations or appraisals.

With respect to the financial forecasts provided to and examined by Jefferies, Jefferies' opinion noted that projecting future results of any company is inherently subject to uncertainty. With respect to the Progenics financial projections and the Progenics management Lantheus financial projections, Progenics informed Jefferies, and Jefferies assumed, that they were reasonably prepared on bases reflecting the best currently available estimates and good faith judgments of the management of Progenics as to the future financial performance of each of Progenics and Lantheus Holdings. With respect to the Lantheus Holdings—Lantheus financial projections and the Lantheus Holdings—Lantheus Progenics financial projections, Lantheus Holdings informed Jefferies, and Jefferies assumed, that they were reasonably prepared on bases reflecting the best currently available estimates and good faith judgments of the management of Lantheus Holdings as to the future financial performance of each of Lantheus Holdings and Progenics. At the direction of Progenics management, Jefferies used and relied upon the Progenics financial projections and the Progenics management Lantheus financial projections in its review and analysis and in rendering its opinion. Jefferies expressed no opinion as to the Progenics financial projections, the Progenics management Lantheus financial projections, the Lantheus Holdings—Lantheus financial projections or the Lantheus Holdings—Lantheus Progenics financial projections or the assumptions on which they were made, and Jefferies assumed that the Progenics financial projections and the Progenics management Lantheus financial projections will be realized in the amounts and at the times projected.

Jefferies' opinion was based on economic, monetary, regulatory, market and other conditions existing, and which could be evaluated, as of the date of Jefferies' opinion. Jefferies expressly disclaimed any undertaking or obligation to advise any person of any change in any fact or matter affecting its opinion of which Jefferies becomes aware after the date of its opinion.

Jefferies made no independent investigation of any legal, regulatory, accounting or tax matters affecting or relating to Progenics or Lantheus Holdings, and Jefferies assumed the correctness in all respects material to its analysis of all legal, regulatory, accounting and tax advice given to Progenics and the Progenics Board, including, without limitation, advice as to the legal, regulatory, accounting and tax consequences of the terms of, and transactions contemplated by, the merger agreement to Progenics. In addition, in preparing its opinion, Jefferies did not take into account any tax consequences of the merger to any holder of Progenics common stock. The Progenics Board advised Jefferies that the merger will qualify as a tax-free reorganization for federal income tax purposes. Jefferies assumed that the final form of the merger agreement would be substantially similar to the last draft reviewed by Jefferies. Jefferies also assumed that the merger will be completed in accordance with the terms of the merger agreement, without waiver, modification or amendment of any term, condition or agreement

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and in compliance with all applicable laws, documents and other requirements and that, in the course of obtaining the necessary regulatory or third-party approvals, consents and releases for the merger, no delay, limitation, restriction or condition will be imposed that would have an adverse effect on Progenics, Lantheus Holdings or the contemplated benefits of the merger.

Jefferies' opinion was for the use and benefit of the Progenics Board (in its capacity as such) in its consideration of the merger. Jefferies' opinion did not address the relative merits of the transactions contemplated by the merger agreement as compared to any alternative transaction or opportunity that might be available to Progenics, nor did it address the underlying business decision by Progenics to engage in the merger or the terms of the merger agreement or the documents referred to therein. Jefferies' opinion did not constitute a recommendation as to how any holder of Progenics common stock should vote with respect to the merger or any matter related thereto. Jefferies was not asked to, and its opinion did not, address the fairness to, or any consideration of, the holders of any class of securities, creditors or other constituencies of Progenics, other than the holders of Progenics common stock. Jefferies expressed no opinion as to the prices at which shares of Progenics common stock or Lantheus Holdings common stock will trade at any time. Furthermore, Jefferies did not express any view or opinion as to the fairness, financial or otherwise, of the amount or nature of any compensation payable to or to be received by any officers, directors or employees of any parties to the merger, or any class of such persons, in connection with the merger, whether relative to the exchange ratio or otherwise. The issuance of Jefferies' opinion was authorized by Jefferies' fairness committee.

In connection with rendering its opinion to the Progenics Board, Jefferies performed a variety of financial and comparative analyses, including those described below. The following summary is not a complete description of all analyses performed and factors considered by Jefferies in connection with its opinion. The preparation of a financial opinion is a complex process involving subjective judgments and is not necessarily susceptible to partial analysis or summary description. With respect to the selected public companies analysis summarized below, no company used as a comparison was identical or directly comparable to Progenics or Lantheus Holdings. These analyses necessarily involved complex considerations and judgments concerning financial and operating characteristics and other factors that could affect the public trading, acquisition or other values of the companies concerned.

Jefferies believes that its analyses and the summary below must be considered as a whole and in context and that selecting portions of its analyses and factors or focusing on information presented in tabular format, without considering all analyses and factors or the narrative description of the analyses, could create a misleading or incomplete view of the processes underlying Jefferies' analyses and opinion. Jefferies did not draw, in isolation, conclusions from or with regard to any one factor or method of analysis for purposes of its opinion, but rather arrived at its ultimate opinion based on the results of all analyses undertaken by it and assessed as a whole.

The estimates of the future performance of Progenics and Lantheus Holdings in or underlying Jefferies' analyses are not necessarily indicative of future results or values, which may be significantly more or less favorable than those estimates. In performing its analyses, Jefferies considered industry performance, general business and economic conditions and other matters, many of which are beyond the control of Progenics and Lantheus Holdings. Estimates of the financial value of companies or businesses do not purport to be appraisals or necessarily reflect the prices at which companies, businesses or securities actually may be sold or acquired. Accordingly, the estimates used in, and the implied reference ranges resulting from, any particular analysis described below are inherently subject to substantial uncertainty and should not be taken as Jefferies' view of the actual value of Progenics, Lantheus Holdings or their respective businesses or securities.

The terms of the merger were determined through negotiations between Progenics and Lantheus Holdings, and the decision by Progenics to enter into the merger agreement was solely that of the Progenics Board. Jefferies' opinion and financial analyses were only one of many factors considered by the Progenics Board and should not be viewed as determinative of the views of the Progenics Board or Progenics management with respect to the merger or exchange ratio set forth in the merger agreement.

Financial Analyses

The summary of the financial analyses described in this section is a summary of the material financial analyses reviewed with the Progenics Board and performed by Jefferies in connection with its opinion. The financial analyses summarized below include information presented in tabular format. In order to fully understand Jefferies' financial analyses, the tables must be read together with the text of each summary. The tables alone do not constitute a complete description of the financial analyses. Considering the data below without considering the full narrative description of the financial analyses, including the methodologies and assumptions underlying the analyses, could create a misleading or incomplete view of Jefferies' financial analyses. The order in which the financial analyses summarized below appear does not necessarily reflect the relative importance or weight given to such analyses. The following quantitative information, to the extent that it is based on market data, is based on market data as it existed on or before October 1, 2019, and is not necessarily indicative of current or future market conditions.

Discounted Cash Flow Analysis

Progenics Analysis

Jefferies performed a discounted cash flow analysis of Progenics by calculating the estimated present value of the standalone unlevered, after-tax free cash flows that Progenics was forecasted to generate during the calendar years ending December 31, 2020 through December 31, 2033 based on the Progenics financial projections. The implied terminal value of Progenics was derived by applying a selected range of perpetuity growth rates of (10.0% to 0.0% to Progenics' normalized unlevered after-tax free cash flow for the calendar year ending December 31, 2033. The present values (as of December 31, 2019) of the cash flows and terminal values were then calculated using a selected discount rate range of 11.5% to 12.5%. Jefferies determined implied enterprise values for Progenics, then added Progenics' net cash as of September 30, 2019 (treating Progenics' non-recourse note as a non-debt item), and divided by the number of fully diluted shares of Progenics common stock as of October 1, 2019 (calculated using the treasury stock method), each as provided or based upon information furnished to Jefferies by Progenics management. This analysis indicated a range of implied equity values per share of Progenics common stock of \$6.42 to \$7.28.

Lantheus Holdings Analysis

Jefferies performed a discounted cash flow analysis of Lantheus Holdings by calculating the estimated present value of the standalone unlevered, after-tax free cash flows that Lantheus Holdings was forecasted to generate during the calendar years ending December 31, 2020 through December 31, 2024 based on Progenics management Lantheus financial projections. The implied terminal value of Lantheus Holdings was derived by applying a selected range of perpetuity growth rates of 3.5% to 4.5% to Lantheus Holdings' unlevered after-tax free cash flow for the calendar year ending December 31, 2024. The present values (as of December 31, 2019) of the cash flows and terminal values were then calculated using a selected discount rate range of 7.8% to 8.8%. Jefferies determined implied enterprise values for Lantheus Holdings, then subtracted Lantheus Holdings' net debt as of September 30, 2019, and divided by the number of fully diluted shares of Lantheus Holdings common stock as of October 1, 2019 (calculated using the treasury stock method), each as provided or based upon information furnished to Jefferies by Lantheus Holdings management. This analysis indicated a range of implied equity values per share of Lantheus Holdings common stock of \$27.72 to \$45.29.

Relative Valuation Analysis

Using the implied value ranges per share of Progenics common stock and Lantheus Holdings common stock derived using the analysis summarized above, Jefferies calculated the ratio of the lowest implied value per share of Lantheus Holdings common stock to the highest implied value per share of Progenics common stock, and the ratio of the highest implied value per share of Progenics common stock to the lowest implied value per share of Lantheus Holdings common stock, compared in each case to the exchange ratio of 0.2502.

This analysis indicated the following:

Implied Exchange Ratio Range

0.1418x – 0.2626x

Selected Companies Analysis

Progenics Analysis

Jefferies reviewed publicly available financial, stock market and operating information of Progenics and the following 12 selected publicly traded oncology and specialty pharmaceutical companies that Jefferies considered generally relevant for purposes of analysis, collectively referred to as the Progenics selected companies:

Oncology Companies:

- Agios Pharmaceuticals, Inc.
- Clovis Oncology, Inc.
- Immunomedics, Inc.
- Karyopharm Therapeutics Inc.
- Spectrum Pharmaceuticals, Inc.
- Stemline Therapeutics, Inc.
- TG Therapeutics, Inc.

Specialty Pharmaceutical Companies:

- Collegium Pharmaceutical, Inc.
- La Jolla Pharmaceutical Company
- Rigel Pharmaceuticals, Inc.
- Supernus Pharmaceuticals, Inc.
- Vanda Pharmaceuticals Inc.

Jefferies reviewed, among other information and to the extent publicly available, enterprise values of the Progenics selected companies, calculated as fully diluted equity values based on closing stock prices on October 1, 2019 (calculated using the treasury stock method), plus total debt and preferred equity (as applicable) less cash and cash equivalents and short-term investments, as a multiple of calendar year 2020, calendar year 2021 and calendar year 2022 estimated revenue. Financial data of the Progenics selected companies were based on publicly available research analysts' estimates, public filings and other publicly available information. Financial data of Progenics was based on the Progenics financial projections.

The overall low to high and median estimated revenue multiples observed for the selected companies were:

- for calendar year 2020: 0.7x to 13.5x (with a median of 2.1x) (excluding from such low, high and median multiples the estimated revenue multiples for Immunomedics, Inc. and Spectrum Pharmaceuticals, Inc., which were greater than 20x and considered not meaningful),
- for calendar year 2021: 0.6x to 8.3x (with a median of 1.9x), and
- for calendar year 2022: 0.6x to 3.9x (with a median of 1.4x).

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Jefferies applied selected ranges derived from the Progenics selected companies of calendar year 2020, calendar year 2021 and calendar year 2022 estimated revenue multiples of 2.5x to 3.5x, 1.75x to 2.75x and 1.0x to 2.0x, respectively, to corresponding data of Progenics. Jefferies determined implied enterprise values for Progenics, then added Progenics' net cash as of September 30, 2019 (treating Progenics' non-recourse note as a non-debt item), and divided by the number of fully diluted shares of Progenics common stock as of October 1, 2019 (calculated using the treasury stock method), each as provided or based upon information furnished to Jefferies by Progenics management.

This analysis indicated the following ranges of implied equity values per share of Progenics common stock:

Implied Per Share Equity Value Reference Ranges based on:

2020E Revenue	2021E Revenue	2022E Revenue
\$1.77 - \$2.17	\$1.98 - \$2.68	\$2.37 - \$3.98

Lantheus Holdings Analysis

Jefferies reviewed publicly available financial, stock market and operating information of Lantheus Holdings and the following ten selected publicly traded imaging agents, diagnostics, imaging equipment and medical equipment/devices public companies that Jefferies considered generally relevant for purposes of analysis, which are collectively referred to as the Lantheus Holdings selected companies:

Imaging Agents:

- Eckert & Ziegler Strahlen- und Medizintechnik AG
- Guerbet SA

Diagnostics:

- bioMérieux S.A.
- DiaSorin S.p.A.

Imaging Equipment:

- Hologic, Inc.
- OSI Systems, Inc.
- Siemens Healthineers AG

Medical Equipment / Devices:

- AngioDynamics, Inc.
- Haemonetics Corporation
- Varian Medical Systems, Inc.

Jefferies reviewed, among other information and to the extent publicly available, enterprise values of the Lantheus Holdings selected companies, calculated as fully diluted equity values based on closing stock prices on October 1, 2019 (calculated using the treasury stock method), plus total debt and preferred equity (as applicable) less cash and cash equivalents and short-term investments, as a multiple of calendar year 2020, calendar year 2021 and calendar year 2022 estimated revenue. Financial data of the Lantheus Holdings selected companies were based on publicly available research analysts' estimates, public filings and other publicly available information. Financial data of Lantheus Holdings was based on the Progenics management Lantheus financial projections.

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The overall low to high and median estimated revenue multiples observed for the selected companies were:

- for calendar year 2020: 1.0x to 7.3x (with a median of 3.2x),
- for calendar year 2021: 0.9x to 6.8x (with a median of 2.9x), and
- for calendar year 2022: 1.8x to 6.2x (with a median of 3.2x) (excluding from such low, high and median multiples the estimated revenue multiples for Guerbet SA and OSI Systems, Inc., which were not available).

Jefferies applied selected ranges derived from the Lantheus Holdings selected companies of calendar year 2020, calendar year 2021 and calendar year 2022 estimated revenue multiples of 2.5x to 3.5x, 2.25x to 3.25x and 2.0x to 3.0x, respectively, to corresponding data of Lantheus Holdings. Jefferies determined implied enterprise values for Lantheus Holdings, then subtracted Lantheus Holdings' net debt as of September 30, 2019, and divided by the number of fully diluted shares of Lantheus Holdings common stock as of October 1, 2019 (calculated using the treasury stock method), each as provided or based upon information furnished to Jefferies by Lantheus Holdings management.

This analysis indicated the following ranges of implied equity values per share of Lantheus Holdings common stock:

Implied Per Share Equity Value Reference Ranges Based on:

2020E Revenue	2021E Revenue	2022E Revenue
\$20.66 - \$30.20	\$20.56 - \$31.13	\$19.56 - \$30.94

Relative Valuation Analysis

Using the implied value ranges per share of Progenics common stock and Lantheus Holdings common stock derived using the analysis summarized above, Jefferies calculated the ratio of the lowest implied value per share of Lantheus Holdings common stock to the highest implied value per share of Progenics common stock, and the ratio of the highest implied value per share of Progenics common stock to the lowest implied value per share of Lantheus Holdings common stock, compared in each case to the exchange ratio of 0.2502:

Benchmark	Implied Exchange Ratio Range
Enterprise Value/2020E Revenue	0.0585x – 0.1051x
Enterprise Value/2021E Revenue	0.0637x – 0.1304x
Enterprise Value/2022E Revenue	0.0766x – 0.2033x

Certain Additional Information

Jefferies observed certain additional information that was not considered part of Jefferies' financial analysis with respect to its opinion but was noted for informational purposes, including the following:

Relative Contributions

Jefferies reviewed the relative contributions of Progenics and Lantheus Holdings to, among other things, the combined company's implied fully diluted equity value as of October 1, 2019 (calculated using the treasury stock method), calendar years 2020 through 2022 estimated revenue, and calendar years 2020 through 2022 estimated gross profit. Estimated financial data of Progenics was based on the Progenics financial projections, and estimated financial data of Lantheus Holdings was based on the Progenics management Lantheus financial projections. This review indicated overall relative contributions of Progenics to the combined company's implied fully diluted equity value as of October 1, 2019 (calculated using the treasury stock method) of 30.6%, to the

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combined company's calendar years 2020 through 2022 estimated revenue (adjusted for net debt) of 14.5% to 29.1%, and calendar years 2020 through calendar year 2022 estimated gross profit (adjusted for net debt) of 19.8% to 39.8%, in each case as compared to the pro forma ownership by holders of Progenics common stock in the combined company implied by the exchange ratio of approximately 35%.

Historical Exchange Ratio

Jefferies observed the exchange ratios implied by the market prices of Progenics common stock and Lantheus Holdings common stock obtained by dividing the closing price per share of Progenics common stock by the closing price per share of Lantheus Holdings common stock for selected dates and selected periods prior to October 1, 2019 as set forth below. This analysis indicated the following historical implied exchange ratios, compared in each case to the exchange ratio of 0.2502.

<u>Selected Period</u>	<u>Implied Exchange Ratio</u>
October 1, 2019	0.2060x
1-Month Average	0.2124x
3-Month Average	0.2028x
6-Month Average	0.1965x
12-Month Average	0.2407x
52 Week High	0.4227x
52 Week Low	0.1499x

Jefferies observed that the implied value of the Lantheus Holdings common stock to be received per share of Progenics common stock in the merger of approximately \$6.01 (which was calculated based on the approximately 86.4 million outstanding shares of Progenics common stock, approximately 7.3 million options outstanding to purchase Progenics common stock at a weighted average strike price of \$6.37 per share, in each case as provided by Progenics management and calculated using the treasury stock method, the closing price per share of Lantheus Holdings common stock of \$24.03 as of October 1, 2019, and the exchange ratio of 0.2502), represented an implied premium of approximately:

- 21.4% over the closing price per share of Progenics common stock on October 1, 2019, the full last trading day prior to the date on which Jefferies rendered its opinion to the Progenics board;
- 11.1% over the closing price per share of Progenics common stock 7-trading days immediately preceding October 1, 2019;
- 63.8% over the closing price per share of Progenics common stock 30-trading days immediately preceding October 1, 2019;
- 32.4% over the closing price per share of Progenics common stock 90-trading days immediately preceding October 1, 2019;
- 22.3% over the volume weighted average price, or VWAP, per share of Progenics common stock during the 30-trading day period immediately preceding October 1, 2019;
- 21.4% over the VWAP per share of Progenics common stock during the 90-trading day period immediately preceding October 1, 2019;
- (8.1%) over the 52-week intraday high price per share of Progenics common stock of \$6.54 on October 5, 2018; and
- 75.8% over the 52-week intraday low price per share of Progenics common stock of \$3.42 on August 20, 2019.

Jefferies reviewed the premiums paid in 27 selected biopharma transactions announced since 2014 with equity values between \$300 million and \$1.5 billion (which included 22 all cash transactions, two cash and stock

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transactions, and three all stock transactions), including the premium paid in each transaction as the percentage by which the per share consideration paid or proposed to be paid in each such transaction (excluding any contingent consideration) exceeded the closing market prices per share of the target companies one day and 30 days prior to announcement of each transaction or public reports or market speculation concerning a potential transaction involving the target company. This analysis indicated the following:

<u>Premiums Paid to Closing Market Price</u>	<u>25th Percentile</u>	<u>Mean</u>	<u>Median</u>	<u>75th Percentile</u>
1-Trading Day Prior	39.5%	65.2%	65.7%	75.8%
30-Trading Days Prior	41.0%	73.0%	57.4%	97.1%

Jefferies also reviewed the premiums paid in 284 selected healthcare, industrial and consumer transactions announced since 2014 involving transactions in which both parties were North American and/or European based companies, with equity values between \$300 million and \$1.5 billion (which included 198 all cash transactions and 14 all stock transactions), including the premium paid in each transaction as the percentage by which the per share consideration paid or proposed to be paid in each such transaction (excluding any contingent consideration) exceeded the closing market prices per share of the target companies one day and 30 days prior to announcement of each transaction or public reports or market speculation concerning a potential transaction involving the target company. This analysis indicated the following:

<u>Average Premiums Paid to Closing Market Price</u>	<u>All Transactions</u>	<u>All Cash Transactions</u>	<u>All Stock Transactions</u>
1 Day Prior	38%	41%	25%
30 Days Prior	42%	45%	19%

Jefferies reviewed 12 selected transactions announced since September 2013 involving specialty pharmaceutical, radiopharmaceutical, radiodiagnostic or oncology companies, and also reviewed, to the extent publicly available, the enterprise values for the target companies based on the consideration paid or proposed to be paid for the equity of the target companies, plus total debt and preferred equity (as applicable), less cash and cash equivalents and short-term investments, as a multiple of such target companies' latest 12 months, or LTM, revenue, and next fiscal year, or FY+1, estimated revenue, in each case as of the applicable announcement date. Financial data was based on publicly available research analyst estimates, public filings and other publicly available information. The overall low to high observed LTM revenue multiples were 2.7x to 16.0x (with a median of 7.6x) for the nine selected transactions for which information was publicly available and for which the observed multiple was not greater than 20x, and the overall low to high observed FY+1 revenue multiples were 2.5x to 16.8x (with a median of 6.5x) for the 10 selected transactions for which information was publicly available and for which the observed multiple was not greater than 20x.

Jefferies reviewed selected public market trading price targets for the Progenics common stock prepared and published by equity research analysts that were publicly available as of October 1, 2019. These price targets ranged from \$6.50 to \$14.00 per share of Progenics common stock, with a mean of \$9.63 per share and a median of \$9.00 per share. Jefferies also reviewed selected public market trading price targets for the Lantheus Holdings common stock prepared and published by equity research analysts that were publicly available as of October 1, 2019. These price targets ranged from \$25.00 to \$28.00 per share of Lantheus Holdings common stock, with a mean of \$27.00 per share and a median of \$27.50 per share.

Miscellaneous

Progenics has agreed to pay Jefferies for its financial advisory services in connection with the merger an aggregate fee in the amount of approximately \$9.2 million, of which: \$1.5 million was payable upon delivery of Jefferies' opinion to the Progenics Board, a portion of the fees received by Jefferies in connection with the stockholder activism matters referred to in the next paragraph in the amount of \$750,000 will be credited, and the balance is payable contingent upon completion of the merger. In addition, Progenics agreed to reimburse

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Jefferies for expenses, including fees and expenses of counsel, incurred in connection with Jefferies' engagement and to indemnify Jefferies and related parties against liabilities, including liabilities under federal securities laws, arising out of or in connection with the services rendered and to be rendered by Jefferies under its engagement.

As the Progenics Board was aware, Jefferies and its affiliates in the past have provided financing services, and have provided and were providing as of the date of Jefferies' opinion, financial advisory services to Progenics unrelated to the merger, for which services Jefferies and its affiliates have received compensation, including, during the two-year period prior to the date of Jefferies' opinion, having acted as joint bookrunning manager for an equity offering of Progenics in 2018 and serving as a financial advisor to Progenics in connection with stockholder activism matters, including in relation to Velan, for which services Jefferies and its affiliates received aggregate fees during such two-year period of approximately \$4.8 million. As the Progenics Board was also aware, during the two-year period prior to the date of Jefferies' opinion, Jefferies did not receive any financial advisory or financing fees from Lantheus Holdings. Jefferies maintains a market in the securities of Progenics and Lantheus Holdings and, in the ordinary course of business, Jefferies and its affiliates may trade or hold securities of Progenics, Lantheus Holdings and/or their respective affiliates for Jefferies' own account and for the accounts of Jefferies' customers and, accordingly, may at any time hold long or short positions in those securities. In the future, Jefferies may seek to provide financial advisory or financing services to Progenics, Lantheus Holdings or entities that are affiliated with Progenics or Lantheus Holdings, for which Jefferies would expect to receive compensation.

Jefferies was selected as a financial advisor to Progenics in connection with the merger because, among other things, Jefferies is an internationally recognized investment banking firm with substantial experience in merger and acquisition transactions and based on its familiarity with Progenics and its business. Jefferies is regularly engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, leveraged buyouts, negotiated underwritings, competitive bids, secondary distributions of listed and unlisted securities and private placements.

Certain Unaudited Prospective Financial Information

Neither Progenics nor Lantheus Holdings generally publishes its business plans and strategies or makes external disclosures of its anticipated financial position or results of operations due to, among other reasons, the uncertainty of the underlying assumptions and estimates, other than, in each case, providing, from time to time, estimated ranges of certain expected financial results and operational metrics for the current year and certain future years in their respective regular earnings press releases and other investor materials.

Each of Progenics management and Lantheus Holdings management, however, prepared and provided certain nonpublic, internal financial projections regarding Progenics and Lantheus Holdings to its respective board of directors in connection with its evaluation of the merger, as well as—as described below—on a confidential basis in the due diligence process to its respective financial advisors in connection with their respective financial analyses described in the sections titled “—Opinion of Progenics' Financial Advisor” and “—Opinion of Lantheus Holdings' Financial Advisor” beginning on pages 129 and 120, respectively, of this joint proxy statement/prospectus.

Progenics Financial Projections

Progenics management prepared and provided certain projections regarding Progenics' future operations for fiscal years 2020 through 2033, on a stand-alone basis, assuming Progenics would continue as an independent company, without giving effect to the completion of the merger, to the Progenics Board in connection with its evaluation of the merger, and to Jefferies, its financial advisor, in connection with its financial analyses described above in the section titled “—Opinion of Progenics' Financial Advisor,” beginning on page 129 of this joint proxy statement/prospectus. Therefore, these projections, which are referred to in this joint proxy statement/prospectus as the Progenics financial projections, do not give effect to the transaction or any changes to

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Progenics' operations or strategy that may be implemented after the completion of the transaction, including potential synergies to be realized as a result of the transaction, or to any costs incurred in connection with the transaction. Furthermore, the Progenics financial projections do not take into account the effect of any failure of the transaction to be completed and should not be viewed as relevant or continuing in that context.

The Progenics financial projections were provided to the Progenics Board in connection with its evaluation of the merger and were also provided to Jefferies in connection with its financial analyses described in the section titled “—Opinion of Progenics' Financial Advisor.”

The following tables present a summary of the Progenics financial projections and estimated amounts of free cash flow:

(\$ in millions)	Fiscal Year Ended December 31,													
	2020 E	2021 E	2022 E	2023 E	2024 E	2025 E	2026 E	2027 E	2028 E	2029 E	2030 E	2031 E	2032 E	2033 E
Total Unadjusted Net Revenue	37.6	72.0	183.5	253.2	331.0	466.0	740.7	1,289.2	1,820.1	2,038.4	2,110.6	1,974.0	885.3	772.9
Total Adjusted Net Revenue(1)	34.9	60.5	139.2	179.8	231.3	291.3	348.9	465.5	555.0	572.6	585.0	462.1	240.2	202.0
Gross Profit(2)	30.3	52.9	120.8	153.6	185.3	239.9	294.5	406.8	491.0	509.6	522.1	423.7	215.8	181.5
EBIT(3)	(69.4)	(68.6)	(10.6)	21.1	42.2	96.9	148.1	257.0	336.7	352.9	362.9	270.7	67.2	38.0
Free Cash Flow(4)	(66.5)	(77.8)	(30.0)	15.8	45.5	99.8	149.1	257.1	321.3	273.4	251.4	212.1	63.4	31.3

- (1) Total Adjusted Net Revenue adjusts Total Unadjusted Net Revenue based on Progenics management's good faith assessment as to the probability of success for Progenics' pipeline programs.
- (2) "Gross Profit" is calculated by starting with Total Adjusted Net Revenue and subtracting cost of goods sold.
- (3) "EBIT" is a non-GAAP financial measure calculated by starting with Gross Profit and subtracting operating expenses.
- (4) "Free Cash Flow" is a non-GAAP financial measure calculated by Jefferies based on information provided or approved by Progenics management, which starts with EBIT and subtracts taxes payable, the change in net working capital and capital expenditures and adds depreciation and amortization. In addition, for the fiscal years 2020 through 2023, the RELISTOR® note payment obligations of Progenics are subtracted in the calculation.

EBIT and free cash flow are non-GAAP financial measures. This information was not prepared for public disclosure. Non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures determined or calculated in accordance with GAAP. Additionally, non-GAAP financial measures as presented by Progenics may not be comparable to similarly titled measures reported by other companies. In the view of Progenics management, the Progenics financial projections were prepared on a reasonable basis based on the information available to Progenics management at the time of their preparation.

Lantheus Financial Projections Prepared by Progenics Management

Progenics management prepared and provided certain projections regarding Lantheus Holdings future operations for fiscal years 2020 through 2024 (other than with respect to 2019, which were provided to Progenics management by Lantheus Holdings management and reviewed and adopted by Progenics management without adjustment), on a stand-alone basis, assuming Lantheus Holdings would continue as an independent company, without giving effect to the completion of the merger, to the Progenics Board in connection with its evaluation of the merger, and to Jefferies, its financial advisor, in connection with its financial analyses described above in the section titled “—Opinion of Progenics' Financial Advisor,” beginning on page 129 of this joint proxy statement/prospectus. Therefore, these projections, which are referred to in this joint proxy statement/prospectus as the Progenics management Lantheus financial projections, do not give effect to the transaction or any changes to Lantheus Holdings' operations or strategy that may be implemented after the completion of the transaction, including potential synergies to be realized as a result of the transaction, or to any costs incurred in connection with the transaction. Furthermore, the Progenics management Lantheus financial projections do not take into account the effect of any failure of the transaction to be completed and should not be viewed as relevant or

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continuing in that context. The Progenics management Lantheus financial projections were made by Progenics management in light of, among other things, the due diligence Progenics conducted on Lantheus Holdings and publicly available forecasts of Lantheus Holdings' future performance by certain financial analysts.

The following table presents a summary of the Progenics management Lantheus financial projections:

(\$ in millions)	Fiscal Year Ended December 31,				
	2020E	2021E	2022E	2023E	2024E
Revenue	386.4	427.6	460.8	482.0	504.2
Gross Profit	191.8	213.4	231.1	242.9	255.4
EBIT(1)	73.1	91.1	105.2	113.2	121.8
Free Cash Flow(2)	68.4	77.7	83.6	90.9	98.8

(1) "EBIT" is a non-GAAP financial measure calculated by starting with Gross Profit and subtracting total operating expenses.

(2) "Free Cash Flow" is a non-GAAP financial measure calculated by Jefferies based on information provided or approved by Progenics management, which starts with EBIT and subtracts taxes payable, the change in net working capital and capital expenditures and adds depreciation and amortization.

EBIT and free cash flow are non-GAAP financial measures. This information was not prepared for public disclosure. Non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures determined or calculated in accordance with GAAP. Additionally, non-GAAP financial measures as presented by Progenics may not be comparable to similarly titled measures reported by other companies. In the view of Progenics management, the Progenics management Lantheus financial projections were prepared on a reasonable basis based on the information available to Progenics management at the time of their preparation.

Lantheus Holdings Financial Projections

Lantheus Holdings management prepared certain nonpublic, internal financial projections regarding Lantheus Holdings' future operations for fiscal years 2020 through 2023, on a stand-alone basis, assuming Lantheus Holdings would continue as an independent company, without giving effect to the completion of the merger. Therefore, these projections, which are referred to in this joint proxy statement/prospectus as the Lantheus Holdings financial projections, do not give effect to the transaction or any changes to Lantheus Holdings' operations or strategy that may be implemented after the completion of the transaction, including potential synergies to be realized as a result of the transaction, or to any costs incurred in connection with the transaction. Furthermore, the Lantheus Holdings financial projections do not take into account the effect of any failure of the transaction to be completed and should not be viewed as relevant or continuing in that context. The Lantheus Holdings financial projections were provided to the Lantheus Holdings Board in connection with its evaluation of the merger, and to SVB Leerink, its financial advisor, in connection with their financial analysis described in the sections titled "—Opinion of Lantheus Holdings' Financial Advisor" beginning on page 120 of this joint proxy statement/prospectus.

The Lantheus Holdings financial projections reflect numerous assumptions and estimates that Lantheus Holdings made in good faith, including, without limitation, (1) that macroeconomic conditions will remain stable, both in the United States and globally, (2) that no major changes occur in U.S. policy, laws and regulations, including reform of the U.S. health care system and tax laws, (3) that gross margins in the pharmaceutical industry remain stable and (4) that no major changes in industry pricing benchmarks and drug pricing generally occur. The Lantheus Holdings financial projections also assume that GAAP as in effect on December 31, 2018 applies throughout the projection period. Lantheus Holdings' non-GAAP measures, including adjusted EBITDA and related information, are adjusted to exclude specified items that represent certain costs, expenses, gains and losses and other items impacting the comparability of financial results, each of which is referred to in this joint proxy statement/prospectus as a non-GAAP financial measure.

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The following table presents a summary of the Lantheus Holdings financial projections:

	Year Ending December 31,			
	2020E	2021E	2022E	2023E
	(dollars in millions)			
Lantheus Holdings revenue	\$ 392	\$ 424	\$ 453	\$ 501
Lantheus Holdings GAAP gross profit	203	226	253	291
Lantheus Holdings adjusted EBITDA ⁽¹⁾	106	122	146	184
Lantheus Holdings depreciation & amortization	(16)	(16)	(16)	(16)
Lantheus Holdings capital expenditures	(13)	(13)	(13)	(13)
Lantheus Holdings unlevered free cash flow ⁽²⁾	57	67	87	112

- (1) Lantheus Holdings adjusted EBITDA is a non-GAAP financial measure defined as net income (loss) plus interest expense (net), income taxes, depreciation, amortization and accretion, stock compensation, financing charges and further adjusted to exclude certain items and other adjustments required or permitted in calculating Adjusted EBITDA under the agreements governing Lantheus Holdings' long-term debt facilities including asset write offs, severance and recruitment, new manufacturing costs and other one-time non-recurring charges.
- (2) Lantheus Holdings unlevered free cash flow is a non-GAAP financial measure defined as earnings before income taxes, interest and amortization, less income tax expenses, plus depreciation, less changes in working capital, less capital expenditures.

Lantheus Holdings unlevered free cash flow and Lantheus Holdings adjusted EBITDA are non-GAAP financial measures. This information was not prepared for public disclosure. Non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures determined or calculated in accordance with GAAP. Additionally, non-GAAP financial measures as presented by Lantheus Holdings may not be comparable to similarly titled measures reported by other companies. In the view of Lantheus Holdings management, the Lantheus Holdings financial projections were prepared on a reasonable basis based on the information available to Lantheus Holdings management at the time of their preparation.

Progenics Stand-Alone Financial Projections Developed by Lantheus Holdings Management

In connection with discussions relating to the merger, Progenics management provided to Lantheus Holdings a portion of the Progenics financial projection inputs and assumptions. In connection with its evaluation of the merger, Lantheus Holdings management made certain adjustments and modifications to the assumptions and estimates underlying the Progenics financial projections and prepared internal financial projections regarding Progenics' future operations for fiscal years 2020 through 2036, which are referred to in this joint proxy statement/prospectus as the Progenics stand-alone financial projections. Such adjustments and modifications, and such internal financial projections, were made by Lantheus Holdings management based on, among other things, Lantheus Holdings' due diligence review of Progenics, market trends and risks and opportunities with respect to Progenics and certain other assumptions and estimates including, without limitation, items (1) through (5) listed under "—Lantheus Holdings Financial Projections" above. In addition, Lantheus Holdings management, in consultation with its clinical development, regulatory and market strategy consultants and based on extensive analysis of due diligence findings, determined a probability of success for each Progenics clinical development program with future commercial opportunity. The cumulative impact of these probability weighted assumptions is included in the table below. Lantheus Holdings management provided the Progenics stand-alone financial projections to the Lantheus Holdings Board in connection with its evaluation of the proposed transaction and to SVB Leerink in connection with their financial analysis described above in the sections titled "—Opinion of Lantheus Holdings' Financial Advisor" beginning on page 120 of this joint proxy statement/prospectus.

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The following table presents a summary of the Lantheus Holdings adjusted Progenics financial projections:

	Year Ending December 31,													
	Q4:19E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2033E	2036E
	(dollars in millions)													
Progenics total revenue	\$ 16	\$ 39	\$ 63	\$ 113	\$ 153	\$ 199	\$ 231	\$ 263	\$ 316	\$ 336	\$ 331	\$ 301	\$ 201	\$ 59
Progenics operating income	(10)	(63)	(39)	19	58	101	146	179	227	243	239	221	146	48
Progenics unlevered free cash flow ⁽¹⁾	(21)	(43)	(34)	3	38	70	108	123	162	182	181	170	114	35

(1) Progenics unlevered free cash flow is a non-GAAP financial measure defined as earnings before income taxes, interest and amortization, less income tax expenses, plus depreciation, less changes in working capital, less capital expenditures.

Progenics unlevered free cash flow is a non-GAAP financial measure. This information was not prepared for public disclosure. Non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures determined or calculated in accordance with GAAP. Additionally, non-GAAP financial measures as presented by Lantheus Holdings may not be comparable to similarly titled measures reported by other companies. In the view of Lantheus Holdings management, the Lantheus Holdings adjusted Progenics financial projections were prepared on a reasonable basis based on the information available to Lantheus Holdings management at the time of their preparation.

Lantheus Holdings Combined Company Projections

Further, in connection with its evaluation of the merger, Lantheus Holdings management prepared certain financial forecasts and unaudited prospective financial information relating to Lantheus Holdings and Progenics as a combined company, giving effect to the completion of merger, which are referred to in this joint proxy statement/prospectus as the Lantheus Holdings combined company projections (which, together with the Lantheus Holdings financial projections and the Lantheus Holdings adjusted Progenics financial projections, are referred to in this joint proxy statement/prospectus as the Lantheus Holdings projections). Lantheus Holdings provided the Lantheus Holdings combined company projections to the Lantheus Holdings Board in connection with its consideration of the merger and to SVB Leerink for purposes of their financial analysis and opinion (see “—Opinion of Lantheus Holdings’ Financial Advisor” beginning on page 120 of this joint proxy statement/prospectus).

The Lantheus Holdings combined company projections reflect numerous assumptions and estimates that Lantheus Holdings made in good faith in connection with the preparation of the Lantheus Holdings adjusted Progenics financial projections and the Lantheus Holdings financial projections as more fully described in “—Lantheus Holdings Financial Projections” and “—Progenics Stand-Alone Financial Projections Developed by Lantheus Holdings Management” beginning on pages 140 and 141, respectively, of this joint proxy statement/prospectus.

The following table presents a summary of the Lantheus Holdings combined company projections:

	Year Ending December 31,			
	2020E	2021E	2022E	2023E
	(dollars in millions)			
Combined company pro forma revenue	\$ 431	\$ 487	\$ 567	\$ 654
Combined company pro forma GAAP gross profit	230	277	350	426
Combined company pro forma adjusted EBITDA ⁽¹⁾	78	132	208	281
Combined company pro forma depreciation & amortization	(50)	(48)	(48)	(48)
Combined company pro forma capital expenditures	(23)	(18)	(15)	(15)

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- (1) Lantheus Holdings combined company adjusted EBITDA is a non-GAAP financial measure defined as net income (loss) plus interest expense (net), income taxes, depreciation, amortization and accretion, stock compensation, financing charges and further adjusted to exclude certain items and other adjustments required or permitted in calculating Adjusted EBITDA under the agreements governing Lantheus Holdings' long-term debt facilities including asset write offs, severance and recruitment, new manufacturing costs and other one-time non-recurring charges, taking into account the potential impact of the Lantheus Holdings projected synergies.

Lantheus Holdings combined company pro forma adjusted EBITDA, as presented above, is a non-GAAP financial measure. This information was prepared for use by Lantheus Holdings and SVB Leerink for purposes of their respective financial analysis and opinion and not for public disclosure. Non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures determined or calculated in accordance with GAAP. Additionally, non-GAAP financial measures as presented by Lantheus Holdings may not be comparable to similarly titled measures reported by other companies. In the view of Lantheus Holdings management, the Lantheus Holdings combined company projections were prepared on a reasonable basis based on the information available to Lantheus Holdings management at the time of their preparation.

Lantheus Holdings Projected Synergies

Lantheus Holdings' management provided to the Lantheus Holdings Board in connection with its consideration of the merger and to SVB Leerink for purposes of their financial analysis and opinion, an estimate of synergies that would be achieved as a result of the merger, which is referred to as the Lantheus Holdings projected synergies.

The following table presents a summary of the Lantheus Holdings projected synergies:

	<u>2020E</u>	<u>2021E</u>	<u>2022E</u>	<u>2023E</u>
		<i>(dollars in millions)</i>		
Cost Synergies (pre-tax)	\$ 21	\$ 34	\$ 28	\$ 32

The transaction is expected to result in meaningful general and administrative expense run-rate cost synergies of approximately \$20 million by 2022 (mostly related to redundant public company costs) and further savings related to prioritizing and optimizing certain pipeline assets. In addition (and not reflected in the chart above), Lantheus Holdings anticipates additional cost avoidance relating to utilizing the already existing commercial, customer service and commercial operations infrastructure at Lantheus Holdings and other potential savings opportunities relating to the procurement of materials.

In projecting the Lantheus Holdings projected synergies, Lantheus Holdings management assumed a one-time cost to achieve the Lantheus Holdings projected synergies of approximately \$11 million.

General Note Regarding Certain Unaudited Prospective Financial Information

Other than annual financial guidance provided to investors, which may be updated from time to time, Lantheus Holdings and Progenics do not as a matter of course make public forecasts or projections as to future revenues, operating income or other results. However, the summaries of the parties' respective projections included above in this joint proxy statement/prospectus, which are referred to collectively in this joint proxy statement/prospectus as the financial projections, are presented solely to give Lantheus Holdings stockholders and Progenics stockholders access to certain non-public information that was made available to Lantheus Holdings, Progenics and their respective boards of directors and advisors in connection with the parties' respective evaluations of the merger. Such information may not be appropriate for other purposes, and is not included to influence your decision, if you are a Progenics stockholder, to vote for the merger agreement proposal, the Progenics adjournment proposal or the Progenics compensation advisory proposal, or, if you are a Lantheus

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Holdings stockholder, to vote for the stock issuance proposal or the Lantheus Holdings adjournment proposal. Readers of this joint proxy statement/prospectus are cautioned not to place undue, if any, reliance on the financial projections. Neither Lantheus Holdings nor Progenics has made any representation in the merger agreement concerning their respective financial projections included in this joint proxy statement/prospectus.

The financial projections were, in general, prepared solely for internal use and not with a view toward public disclosure, and are subjective in many respects and thus subject to interpretation. While presented with numerical specificity, the financial projections reflect numerous assumptions and estimates that the parties preparing the financial projections made in good faith at the time such projections were prepared with respect to industry performance, general business, economic, regulatory, market and financial conditions and other future events, as well as matters specific to the applicable party. These assumptions and estimates are inherently uncertain, were made as of the date the financial projections were prepared, and may not be reflective of actual results, either since the date such projections were prepared, now or in the future, in light of changed circumstances, economic conditions, or other developments. Some or all of the assumptions and estimates that have been made regarding, among other things, the timing of certain occurrences or impacts, may have changed since the date the financial projections were prepared. The financial projections were based on numerous variables and assumptions that are inherently uncertain and may be beyond the control of Lantheus Holdings or Progenics, as applicable.

Important factors that may affect actual results and cause the financial projections not to be achieved include risks and uncertainties relating to Lantheus Holdings' and Progenics' businesses (including their abilities to achieve their respective strategic goals, objectives and targets over applicable periods; industry conditions; the regulatory environment; general business and economic conditions; and other factors described under "Risk Factors" and "Cautionary Statement Regarding Forward-Looking Statements" beginning on pages 34 and 66, respectively, of this joint proxy statement/prospectus, as well as the risk factors with respect to Lantheus Holdings' and Progenics' respective businesses contained in their most recent SEC filings, which readers are urged to review, and which may be found as described under "Where You Can Find More Information" beginning on page 222 of this joint proxy statement/prospectus). In addition, the financial projections cover multiple future years, and such information by its nature is less reliable in predicting each successive year. The financial projections also do not take into account any circumstances or events occurring after the date on which they were prepared, and do not give effect to the transactions contemplated by the merger agreement, including the merger, except that, as described above, the Lantheus Holdings combined company projections give effect to the completion of the merger. The financial projections also reflect assumptions as to certain business decisions that are subject to change. As a result, actual results may differ materially from those contained in the financial projections. Accordingly, there can be no assurance that the financial projections will be realized or that actual results will not be significantly different than projected.

Progenics and Lantheus Holdings may calculate certain non-GAAP financial metrics, including EBIT and EBITDA, using different methodologies. Consequently, the financial metrics presented in each company's prospective financial information disclosures and in the sections of this joint proxy statement/prospectus with respect to the opinions of the financial advisors to Progenics and Lantheus Holdings may not be directly comparable to one another.

The financial projections were not prepared with a view toward public disclosure, the published guidelines of the SEC regarding projections or the guidelines established by the American Institute of Certified Public Accountants for preparation and presentation of prospective financial information. Neither Lantheus Holdings' nor Progenics' independent registered public accounting firm, nor any other independent accountants, have compiled, examined or performed any procedures with respect to the financial projections, nor has any of them expressed any opinion or any other form of assurance on the financial projections or the achievability of the results reflected in the financial projections, and none of them assumes any responsibility for, and each of them disclaims any association with, the financial projections. The reports of Lantheus Holdings' and Progenics' independent registered public accounting firms, contained in Annual Reports on Form 10-K for the year ended December 31, 2018 for Progenics and Lantheus Holdings, which are incorporated by reference into this joint

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proxy statement/prospectus, relate to Lantheus Holdings' and Progenics' historical financial information, respectively, and no such report extends to the financial projections or should be read to do so.

Certain of the financial projections may be considered non-GAAP financial measures. Non-GAAP financial measures should not be considered in isolation from, or as a substitute for, financial information presented in compliance with U.S. GAAP, and non-GAAP financial measures as used in the financial projections may not be comparable to similarly titled measures used by other companies. Neither Lantheus Holdings nor Progenics has provided reconciliations of the non-GAAP financial projections to the comparable GAAP measure due to no reasonably accessible or reliable comparable GAAP measures for these measures and because of the inherent difficulty in forecasting and quantifying these measures that are necessary for such reconciliation. In the view of each of Lantheus Holdings' and Progenics' respective management, the financial projections in this joint proxy statement/prospectus provided by Lantheus Holdings and Progenics, respectively, were prepared on a reasonable basis based on the information available to such company's management at the time of their preparation.

The inclusion of the financial projections in this joint proxy statement/prospectus should not be regarded as an indication that any of Lantheus Holdings, Progenics or their respective affiliates, officers, directors, employees, advisors or other representatives considered the financial projections to be predictive of actual future events, and the financial projections should not be relied on as such. None of Lantheus Holdings, Progenics or their respective affiliates, officers, employees, directors, advisors or other representatives can give you any assurance that actual results will not differ from the financial projections, and none of Lantheus Holdings, Progenics or their respective affiliates, officers, directors, employees, advisors or other representatives undertakes any obligation to update or otherwise revise or reconcile the financial projections to reflect circumstances existing after the date the financial projections were prepared or to reflect the occurrence of future events even in the event that any or all of the assumptions underlying the financial projections are not realized. Neither Lantheus Holdings nor Progenics intends to publicly update or make any other revision to the financial projections. None of Lantheus Holdings, Progenics or any of their respective affiliates, officers, employees, directors, advisors or other representatives has made or makes any representation to any Lantheus Holdings stockholder, Progenics stockholder or any other person regarding Lantheus Holdings or Progenics' ultimate performance compared to the financial projections or that the results reflected therein will be achieved. Neither Lantheus Holdings nor Progenics has made any representation to the other, in the merger agreement or otherwise, concerning the financial projections. For the reasons described above, readers of this joint proxy statement/prospectus are cautioned not to place undue, if any, reliance on the financial projections.

Regulatory Approvals Required for the Merger

General

As more fully described in this joint proxy statement/prospectus and in the merger agreement, and subject to the terms and conditions of the merger agreement, Lantheus Holdings and Progenics have each agreed to use their respective reasonable best efforts to obtain all regulatory approvals required to complete the merger. This includes (i) obtaining as promptly as reasonably practicable any necessary consents, approvals and waivers, (ii) making as promptly as practicable all necessary filings with any governmental authority (including the required filings under the HSR Act and foreign competition laws), self-regulatory organization or other third party necessary in connection with the completion of the merger, (iii) complying at the earliest practicable date with any request under the HSR Act for additional information, documents or other materials received by such party from the FTC, the Antitrust Division or by any other governmental authority in respect of such filings, submissions and declarations or the merger or (iv) acting in good faith and reasonably cooperating with the other party in connection with any such filings, submissions and declarations and in connection with resolving, and using reasonable best efforts to resolve, any investigation or other inquiry of any such agency or other governmental authority under applicable law or orders that are designed to prohibit, restrict or regulate actions having the purpose or effect of monopolization or restraint of trade with respect to any such filings, submissions

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and declarations or the merger. See “The Merger Agreement—Reasonable Best Efforts Covenant” beginning on page 167 of this joint proxy statement/prospectus.

The obligation of Lantheus Holdings and Progenics to effect the merger is conditioned upon, among other things, the expiration or early termination of the applicable waiting period under the HSR Act. See “The Merger Agreement—Conditions to Completion of the Merger” beginning on page 153 of this joint proxy statement/prospectus.

Department of Justice, Federal Trade Commission and Other U.S. Antitrust Authorities

Under the HSR Act, certain transactions, including the merger, may not be completed unless certain waiting period requirements have expired or been terminated. The HSR Act provides that each party must file a pre-merger notification with the FTC and the Antitrust Division. A transaction notifiable under the HSR Act may not be completed until the expiration of a 30-calendar-day waiting period following the parties’ filings of their respective HSR Act notification forms or the early termination of that waiting period. The parties may also choose to voluntarily re-start the initial 30-calendar-day waiting period by following certain prescribed procedures. After the expiration of the initial waiting period (or the re-started initial waiting period) the Antitrust Division or the FTC may issue a Second Request. If a Second Request is issued, the parties may not complete the merger until they substantially comply with the Second Request and observe a second 30-calendar-day waiting period, unless the waiting period is terminated earlier.

Each of Lantheus Holdings and Progenics filed its respective HSR Act notification and report with respect to the merger on October 16, 2019. The FTC granted early termination of the HSR Act waiting period on October 25, 2019.

At any time before or after the merger is completed, the FTC or Antitrust Division could take action under U.S. antitrust laws in opposition to the merger, including seeking to enjoin completion of the merger, condition approval of the merger upon the divestiture of assets of Lantheus Holdings, Progenics or their respective subsidiaries or impose restrictions on Lantheus Holdings’ post-merger operations. In addition, U.S. state attorneys general could take such action under the antitrust laws as they deem necessary or desirable in the public interest, including, without limitation, seeking to enjoin completion of the merger or permitting completion subject to regulatory concessions or conditions. Private parties also may seek to take legal action under the antitrust laws under some circumstances.

Timing; Challenges by Governmental and Other Entities

There can be no assurance that any of the regulatory approvals described above will be obtained and, if obtained, there can be no assurance as to the timing of any approvals, the ability to obtain the approvals on satisfactory terms or the absence of any litigation challenging such approvals. In addition, there can be no assurance that any of the governmental or other entities described above, including the Antitrust Division, FTC, U.S. state attorneys general, state insurance regulators, foreign regulators and private parties, will not challenge the merger on antitrust or competition grounds and, if such a challenge is made, there can be no assurance as to its result.

Subject to certain conditions, if the merger is not completed by July 1, 2020, either Lantheus Holdings or Progenics may terminate the merger agreement. See “The Merger Agreement—Termination of the Merger Agreement” beginning on page 174 of this joint proxy statement/prospectus.

No Appraisal or Dissenters’ Rights for Progenics Stockholders

Appraisal rights are statutory rights that, if applicable under law, enable stockholders to dissent from an extraordinary transaction, such as a merger, and to demand that the corporation pay the fair value for their shares, as determined by a court in a judicial proceeding, instead of receiving the consideration offered to the stockholders in connection with the transaction.

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Under the DGCL, stockholders do not have appraisal rights if the shares of stock they hold are either listed on a national securities exchange or held of record by more than 2,000 holders. Notwithstanding the foregoing, appraisal rights are available if stockholders are required by the terms of the merger agreement to accept for their shares anything other than (i) shares of stock of the surviving corporation, (ii) shares of stock of another corporation that will either be listed on a national securities exchange or held of record by more than 2,000 holders, (iii) cash in lieu of fractional shares or (iv) any combination of the foregoing.

Because (1) Progenics common stock is currently listed on the Nasdaq Global Select Market, and (2) following the merger, Progenics stockholders will receive Lantheus Holdings common stock, which is listed on the Nasdaq Global Market and which is expected to continue to be so listed, Progenics stockholders are not entitled to appraisal rights in connection with the merger.

Material U.S. Federal Income Tax Consequences

The following summary discusses the material U.S. federal income tax consequences of the merger to holders of shares of Progenics common stock. This discussion is based on the Code, applicable U.S. Treasury regulations promulgated under the Code, administrative interpretations, and judicial decisions as in effect as of the date of this joint proxy statement/prospectus, all of which may change, possibly with retroactive effect.

This discussion addresses only the consequences of the exchange of shares of Progenics common stock held as capital assets within the meaning of Section 1221 of the Code (generally, property held for investment). It does not address all aspects of U.S. federal income taxation that may be relevant to a Progenics stockholder in light of the Progenics stockholder's particular circumstances, or to a Progenics stockholder that is subject to special rules, such as:

- a financial institution or insurance company;
- a mutual fund;
- a pass-through entity or investors in such entity;
- a tax-exempt organization;
- a dealer or broker in securities;
- a person whose functional currency is not the U.S. dollar;
- a former citizen or former long-term resident of the United States;
- a regulated investment company or real estate investment trust;
- a Progenics stockholder that holds its shares of Progenics common stock (or will hold its shares of Lantheus Holdings common stock) through individual retirement or other tax-deferred accounts;
- a trader in securities who elects to apply a mark-to-market method of accounting;
- a Progenics stockholder that holds shares of Progenics common stock (or will hold its shares of Lantheus Holdings common stock) as part of a hedge, appreciated financial position, straddle, or conversion or integrated transaction;
- a Progenics stockholder that acquired shares of Progenics common stock through the exercise of compensatory options or stock purchase plans or otherwise as compensation;
- a U.S. expatriate or entity covered by the anti-inversion rules under the Code;
- a person who actually or constructively owns more than 5% of Progenics common stock;
- a person who holds both shares of Progenics common stock and Lantheus Holdings common stock;
- a person subject to special tax accounting rules (including rules requiring recognition of gross income based on a taxpayer's applicable financial statement);

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- a non-U.S. person or entity; and
- a person subject to the base erosion and anti-abuse tax.

For purposes of this discussion, a “U.S. holder” is a beneficial owner of shares of Progenics common stock that is for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity or arrangement taxable as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States or any state therein or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust (i) that is subject to the primary supervision of a court within the United States and all the substantial decisions of which are controlled by one or more U.S. persons or (ii) that has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

If a partnership (including any entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds shares of Progenics common stock, the U.S. federal income tax treatment of a partner in the partnership will generally depend upon the status of the partner and the activities of the partnership. A partner of a partnership holding shares of Progenics common stock should consult its tax advisors regarding the tax consequences to it of the merger.

This discussion of material U.S. federal income tax consequences is not a complete description of all potential U.S. federal income tax consequences of the merger. This discussion does not address tax consequences that may vary with, or are contingent on, individual circumstances. In addition, it does not address any alternative minimum tax, any non-income tax or any non-U.S., state or local tax consequences of the merger or the potential application of the Medicare contribution tax on net investment income. **Accordingly, each Progenics stockholder should consult its tax advisor to determine the particular U.S. federal, state or local or non-U.S. income or other tax consequences to it of the merger, including the application and effect of any U.S. federal, state, local and foreign income, estate, gift and other tax laws to the receipt of Lantheus Holdings common stock or cash in lieu of fractional shares of Lantheus Holdings common stock in exchange for Progenics common stock pursuant to the merger.**

As of the date hereof, it is intended that the merger will qualify as a “reorganization” within the meaning of Section 368(a) of the Code and that, for U.S. federal income tax purposes, generally no gain or loss will be recognized by the Progenics stockholders to the extent the Progenics stockholders receive shares of Lantheus Holding common stock. The obligation of the parties to complete the merger is conditioned on the receipt of legal opinions of White & Case (or another nationally recognized tax or accounting firm in the United States reasonably acceptable to the parties), and O’Melveny (or another nationally recognized tax or accounting firm in the United States reasonably acceptable to the parties), each to the effect that the merger will be treated for U.S. federal income tax purposes as a “reorganization” within the meaning of Section 368(a) of the Code. Such opinions will be based upon facts, representations and assumptions set forth in such opinion and upon certificates of officers of Progenics, Lantheus Holdings and Merger Sub. The opinions of counsel as to such U.S. federal income tax consequences described above will not be binding on the IRS or any court. Neither Lantheus Holdings nor Progenics has requested a ruling from the IRS regarding any of the U.S. federal income tax consequences of the merger. Accordingly, there can be no assurance that the IRS will not assert, or that a court would not sustain, a position contrary to any of the conclusions set forth in any of the opinions stated or referred to herein. In addition, if any of the representations or assumptions upon which those opinions are based are inconsistent with the actual facts or circumstances, the U.S. federal income tax consequences of the merger could be adversely affected.

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Assuming the merger qualifies as a “reorganization” within the meaning of Section 368(a) of the Code, for U.S. federal income tax purposes:

- generally, no gain or loss will be recognized by Progenics stockholders as a result of exchanging their Progenics common stock for Lantheus Holding common stock pursuant to the merger (except as discussed below with respect to cash received in lieu of fractional shares);
- the aggregate tax basis of the Lantheus Holdings common stock that Progenics stockholders receive pursuant to the merger will generally equal the aggregate adjusted tax basis in the shares of the Progenics common stock surrendered in exchange therefor pursuant to the merger; and
- the holding period of the shares of Lantheus Holdings common stock that Progenics stockholders receive pursuant to the merger will generally include the holding period of the Progenics common stock surrendered in exchange therefor pursuant to the merger.

If a Progenics stockholder receives cash in lieu of any fractional share of Lantheus Holdings common stock pursuant to the merger, the Progenics stockholder generally will recognize gain or loss equal to the difference between such proceeds and the tax basis allocated to such fractional share. Generally, such gain or loss will constitute capital gain or loss if such Progenics stockholder’s Progenics common stock is a capital asset at the effective time of the merger and will be a long-term capital gain or loss if such Progenics stockholder’s Progenics common stock has been held for more than one year as of such effective time.

If the merger does not qualify as a “reorganization” within the meaning of Section 368(a) of the Code, then a U.S. holder of Progenics common stock who receives Lantheus Holdings common stock pursuant to the merger would generally recognize capital gain or loss equal to the difference between (i) the sum of the fair market value of the Lantheus Holdings common stock and any cash for fractional shares received and (ii) such holder’s tax basis in the Progenics common stock surrendered in exchange therefor. U.S. holders that realize a loss should consult their tax advisors regarding the allowance of this loss.

Accounting Treatment

The unaudited pro forma condensed combined financial statements have been prepared using the acquisition method of accounting under Accounting Standards Codification Topic 805, *Business Combinations*, or ASC 805, with Lantheus Holdings being the accounting acquirer in the proposed merger with Progenics. Lantheus Holdings will record certain Progenics assets to be acquired and liabilities to be assumed at fair market value at the date of completion of the merger. Any excess of the purchase price (as described under “Note 5. Estimate of consideration expected to be transferred in the merger and preliminary purchase price allocation” under “Notes to the Unaudited Pro Forma Condensed Combined Financial Statements” beginning on page 55 of this joint proxy statement/prospectus) over the net fair value of such assets and liabilities will be recorded as goodwill.

Listing of Lantheus Holdings Common Stock; Delisting and Deregistration of Shares of Progenics Common Stock

The merger agreement obligates Lantheus Holdings to use its reasonable best efforts to cause the Lantheus Holdings common stock to be issued in the merger to be listed on the Nasdaq Global Market, subject to official notice of issuance, prior to the completion of the merger. See “The Merger Agreement—Listing of Lantheus Holdings Common Stock” beginning on page 153 for further information. Approval for listing on the Nasdaq Global Market of the Lantheus Holdings common stock, subject to official notice of issuance, is a condition to the obligations of Progenics and Lantheus Holdings to complete the merger as described under “The Merger Agreement—Conditions to Completion of the Merger” beginning on page 153 of this joint proxy statement/prospectus. If the merger is completed, shares of Progenics common stock will no longer be publicly traded, will be delisted from the Nasdaq Global Select Market and will be deregistered under the Exchange Act, and Progenics will no longer be required to file periodic reports with the SEC.

THE MERGER AGREEMENT

The following is a summary of the material terms and conditions of the merger agreement. This summary may not contain all the information about the merger agreement that is important to you. This summary is qualified in its entirety by reference to the merger agreement attached as Annex A to, and incorporated by reference into, this joint proxy statement/prospectus. You are encouraged to read the merger agreement carefully and in its entirety because it is the legal document that governs the merger and the other transactions described in this joint proxy statement/prospectus (including the stock issuance).

Explanatory Note Regarding the Merger Agreement and the Summary of the Merger Agreement: Representations, Warranties and Covenants in the Merger Agreement Are Not Intended to Function or Be Relied on as Public Disclosures

The merger agreement and the summary of its terms in this joint proxy statement/prospectus have been included to provide information about the terms and conditions of the merger agreement. The terms and information in the merger agreement are not intended to provide any other public disclosure of factual information about Progenics, Lantheus Holdings or any of their respective subsidiaries or affiliates. The representations, warranties, covenants and agreements contained in the merger agreement are made by Progenics, Lantheus Holdings and Merger Sub only for the purposes of the merger agreement and are qualified and subject to certain limitations and exceptions agreed to by Progenics, Lantheus Holdings and Merger Sub in connection with negotiating the terms of the merger agreement. In particular, in your review of the representations and warranties contained in the merger agreement and described in this summary, it is important to bear in mind that the representations and warranties were made solely for the benefit of the parties to the merger agreement and were negotiated for the purpose of allocating contractual risk among the parties to the merger agreement rather than to establish matters as facts. The representations and warranties may also be subject to a contractual standard of materiality or material adverse effect different from those generally applicable to stockholders and reports and documents filed with the SEC and in some cases may be qualified by confidential disclosures made by one party to the other, which are not reflected in the merger agreement. Moreover, information concerning the subject matter of the representations and warranties, which do not purport to be accurate as of the date of this joint proxy statement/prospectus, may have changed since the date of the merger agreement, which subsequent information may or may not be fully reflected in Progenics' or Lantheus Holdings' public disclosures. Investors are not third-party beneficiaries under the merger agreement except for the limited purposes expressly set forth therein and should not rely on the representations and warranties or any descriptions thereof as characterizations of the actual state of facts or condition of the parties thereto or any of their respective subsidiaries or affiliates.

For the foregoing reasons, the representations, warranties, covenants and agreements and any descriptions of those provisions should not be read alone or relied upon as characterizations of the actual state of facts or condition of Progenics and Lantheus Holdings or any of their respective subsidiaries or affiliates. Instead, such provisions or descriptions should be read only in conjunction with the other information provided elsewhere in this joint proxy statement/prospectus or incorporated by reference into this joint proxy statement/prospectus.

Structure of the Merger

The merger agreement provides for the merger of Merger Sub with and into Progenics, with Progenics surviving the merger as a wholly-owned subsidiary of Lantheus Holdings.

Directors and Officers of the Surviving Corporation

From and after the effective time of the merger, the directors of Merger Sub and the officers of Progenics immediately prior to such time will be the directors and officers, respectively, of Progenics, as the surviving corporation in the merger, in each case, until their successors are duly elected or appointed and qualified or until their earlier death, resignation or removal in accordance with the surviving corporation's certificate of incorporation and by-laws.

Closing and Effectiveness of the Merger

Unless otherwise mutually agreed to by Progenics and Lantheus Holdings, the closing of the merger will take place at 8:00 a.m., New York time, on the third business day following the satisfaction or, to the extent permitted by applicable law, waiver by the party or parties entitled to the benefits of the conditions to the parties' obligations to complete the merger (other than those conditions that by their nature are to be satisfied at the closing of the merger, but subject to the satisfaction or, to the extent permitted by applicable law, waiver of such conditions by the party or parties entitled to the benefit thereof at the time of the closing of the merger) described under "—Conditions to Completion of the Merger" beginning on page 153 of this joint proxy statement/prospectus. At the closing of the merger, the parties will file a certificate of merger with the Secretary of State of the State of Delaware. The merger will be effective at such time as the certificate of merger is duly filed with the Secretary of State of the State of Delaware on the closing date, or at such later time as Lantheus Holdings and Progenics will agree and specify in the certificate of merger, which time is referred to in this joint proxy statement/prospectus as the effective time of the merger. At the effective time of the merger, all of the property, rights, privileges, powers and franchises of Progenics and Merger Sub will vest in the surviving corporation, and all debts, liabilities and duties of Progenics and Merger Sub will become the debts, liabilities and duties of the surviving corporation.

Assuming timely satisfaction of the necessary closing conditions, the completion of the merger is expected to occur in the first quarter of 2020. However, as the merger is subject to the satisfaction or waiver of other conditions described in the merger agreement, it is possible that factors outside the control of Progenics and Lantheus Holdings could result in the merger being completed at a later time or not at all. If the merger is not completed by July 1, 2020, either Progenics or Lantheus Holdings may terminate the merger agreement. The right to terminate the merger agreement after July 1, 2020 will not be available to Progenics or Lantheus Holdings if that party's failure to fulfill any obligation under the merger agreement has been the primary cause of, or directly resulted in, the failure of the merger to be completed by July 1, 2020. See "—Conditions to Completion of the Merger" and "—Termination of the Merger Agreement" beginning on pages 153 and 174, respectively, of this joint proxy statement/prospectus.

Merger Consideration

At the effective time of the merger, each share of Progenics common stock issued and outstanding immediately prior to such time (other than shares of Progenics common stock owned by Lantheus Holdings, Progenics or any of their respective wholly-owned subsidiaries, which are collectively referred to as excluded shares in this joint proxy statement/prospectus) will be converted into the right to receive 0.2502 of a share of Lantheus Holdings common stock.

No Fractional Shares of Lantheus Holdings

Progenics stockholders will not receive any fractional shares of Lantheus Holdings common stock in the merger. Each Progenics stockholder that otherwise would have been entitled to receive a fraction of a share of Lantheus Holdings common stock will receive, in lieu thereof, cash, without interest, in an amount determined by multiplying (i) the fraction of a share (after aggregating all shares of Progenics common stock held by such holder at the effective time of the merger and rounded to the nearest one thousandth when expressed in decimal form) of Lantheus Holdings common stock which such holder would otherwise be entitled to receive pursuant to the merger agreement by (ii) the volume-weighted average price per share of Lantheus Holdings common stock on the Nasdaq Global Market for the twenty consecutive trading days ending with the second complete trading day prior to the closing date.

Appraisal Rights

In accordance with Section 262 of the DGCL, no appraisal rights will be available to holders of Progenics common stock in connection with the merger.

Procedures for Exchanging Progenics Common Stock for Lantheus Holdings Common Stock

The conversion of Progenics common stock, other than excluded stock, into the right to receive the merger consideration will occur automatically at the effective time of the merger. Prior to the effective time of the merger, Lantheus Holdings will appoint an exchange agent reasonably acceptable to Progenics for the purpose of exchanging shares of Progenics common stock for the merger consideration. At the effective time of the merger, Lantheus Holdings will deposit with the exchange agent non-certificated shares of Lantheus Holdings common stock in book-entry form and an amount of cash in U.S. dollars sufficient to make any payments in respect of fractional shares of Progenics common stock. Following the effective time of the merger, Lantheus Holdings will make available to the exchange agent, as needed, cash in U.S. dollars sufficient to pay any dividends with respect to shares of Lantheus Holdings common stock issued in the merger.

As soon as reasonably practicable after the effective time of the merger, Lantheus Holdings will send, or will cause the exchange agent to send, to each holder of record of one or more certificates representing shares of Progenics common stock as of the effective time of the merger, a letter of transmittal in such form as Lantheus Holdings may specify subject to Progenics' reasonable approval prior to the effective time of the merger, with instructions for use in effecting the surrender of such certificates (or effective affidavits of loss in lieu thereof) to the exchange agent in exchange for the merger consideration. After the effective time of the merger, each certificate that previously represented shares of Progenics common stock and each non-certificated share of Progenics common stock that previously was registered to a holder on Progenics' stock transfer books, except for excluded shares, will only represent the right to receive the merger consideration into which those shares of Progenics common stock have been converted (and any cash to be paid in lieu of any fractional shares of Lantheus Holdings common stock and dividends on the Lantheus Holdings common stock into which such shares of Progenics common stock have been converted).

Neither Progenics, Lantheus Holdings nor the exchange agent will be responsible for transfer or other similar taxes and fees incurred by holders of Progenics common stock in connection with the merger. Those taxes and fees, if any, will be the sole responsibility of such holders. In addition, if there is a transfer of ownership of a certificate that previously represented Progenics common stock that is not registered in the records of Progenics' transfer agent as of the effective time of the merger, payment of the merger consideration as described above (and any cash to be paid in lieu of any fractional shares of Lantheus Holdings common stock and dividends on the Lantheus Holdings common stock into which such shares of Progenics common stock have been converted) will be made to a person other than the person in whose name the certificate representing shares of Progenics common stock so surrendered is registered only if the certificate is properly endorsed or otherwise is in proper form for transfer, and the person requesting the payment provides evidence that any applicable stock transfer taxes have been paid or are not applicable in form and substance reasonably satisfactory to the exchange agent. With respect to non-certificated shares of Progenics common stock that previously were registered to a holder on Progenics' stock transfer books, payments will only be made to the person in whose name such shares are registered as of the effective time of the merger.

Dividends and Distributions with respect to Unexchanged Shares

Lantheus Holdings will not pay dividends with a record date on or after the effective time of the merger to any holder of any certificates that previously represented shares of Progenics common stock or any non-certificated shares of Progenics common stock on the shares of Lantheus Holdings common stock into which such shares of Progenics common stock have been converted until the holder surrenders such certificates or transfers such non-certificated shares of Progenics common stock as described under "—Procedures for Exchanging Progenics Common Stock for Lantheus Holdings Common Stock" beginning on page 152 of this joint proxy statement/prospectus. However, once those certificates or non-certificated shares of Progenics common stock are surrendered or transferred, as applicable, Lantheus Holdings will pay to the holder, without interest, any dividends on the shares of Lantheus Holdings common stock into which such shares of Progenics common stock have been converted with a record date on or after the effective time of the merger that have been paid prior to

such surrender or transfer, as applicable, and any cash in lieu of fractional shares that such holder is entitled to receive.

Lost, Stolen or Destroyed Certificates

If any certificate representing shares of Progenics common stock has been lost, stolen or destroyed, upon the making of an affidavit of that fact by the person claiming such certificate to be lost, stolen or destroyed and, if required by Lantheus Holdings, the posting by such person of a bond, in such reasonable amount as Lantheus Holdings may direct, as indemnity against any claim that may be made against it with respect to such certificate, the exchange agent will issue in exchange for such lost, stolen or destroyed certificate the merger consideration, any cash to be paid in lieu of any fractional share of Lantheus Holdings common stock and any dividends to be paid in respect of the shares of Progenics common stock represented by such certificate as contemplated by the merger agreement.

Treatment of Progenics Stock Options

At the effective time of the merger, each outstanding and unexercised option to purchase shares of Progenics common stock under any Progenics stock plan, which is referred to in this joint proxy statement/prospectus as a Progenics stock option, will be assumed by Lantheus Holdings on the same terms and conditions and converted into an option to purchase the number of shares of Lantheus Holdings common stock (rounded down to the nearest whole share) equal to the product obtained by multiplying the total number of shares of Progenics common stock that were subject to such Progenics stock option immediately prior to the effective time of the merger by 0.2502 (the exchange ratio in the merger), at a per-share exercise price (rounded up to the nearest whole cent) equal to the quotient obtained by dividing the exercise price per share of Progenics common stock at which such Progenics stock option was exercisable immediately prior to the effective time of the merger by 0.2502 (the exchange ratio in the merger). Except for these adjustments, each assumed option will be subject to the same terms and conditions (including any applicable vesting and acceleration provisions) as applied to the corresponding Progenics stock option immediately prior to the effective time of the merger.

Listing of Lantheus Holdings Common Stock

The merger agreement obligates Lantheus Holdings to use its reasonable best efforts to cause the shares of Lantheus Holdings common stock to be issued in the merger as part of the merger consideration to be approved for listing on the Nasdaq Global Market, subject to official notice of issuance, prior to the closing date. Approval for listing on the Nasdaq Global Market of the shares of Lantheus Holdings common stock to be issued in the merger and such other shares to be reserved for issuance in connection with the merger is a condition to the obligations of Progenics and Lantheus Holdings to complete the merger as described under “—Conditions to Completion of the Merger” beginning on page 153 of this joint proxy statement/prospectus.

Governance Matters Following Completion of the Merger

At the effective time of the merger, the Lantheus Holdings Board will appoint one individual as mutually agreed upon in good faith by Progenics and Lantheus Holdings, who must have been serving as a director of Progenics as of the date of the merger agreement, and reasonably approved by the Nominating and Corporate Governance Committee of the Lantheus Holdings Board to serve, effective as of the effective time of the merger, on the Lantheus Holdings Board.

Conditions to Completion of the Merger

Mutual Conditions to Completion. The obligation of each of Progenics, Lantheus Holdings and Merger Sub to complete the merger is subject to the satisfaction or, to the extent permitted by applicable law, waiver on or prior to the closing date of the following conditions:

- approval of the merger agreement proposal by the affirmative vote of the holders of at least a majority of the outstanding shares of Progenics common stock;

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- approval of the stock issuance proposal by the affirmative vote of the holders of at least a majority of the votes cast by holders of the outstanding shares of Lantheus Holdings common stock;
- the absence of any law enacted or order issued by a governmental authority of competent jurisdiction having the effect of making the merger illegal or otherwise prohibiting completion of the merger;
- effectiveness of the registration statement for the Lantheus Holdings common stock to be issued in the merger (of which this joint proxy statement/prospectus forms a part) and the absence of any stop order suspending the effectiveness or any proceedings for that purpose initiated or threatened by the SEC;
- approval for listing on the Nasdaq Global Market of the Lantheus Holdings common stock to be issued in the merger and such other shares to be reserved for issuance in connection with the merger; and
- any applicable waiting period (and any extension thereof) under the HSR Act has expired or been terminated (early termination was received on October 25, 2019).

Additional Conditions to Completion for the Benefit of Lantheus Holdings and Merger Sub. In addition, the obligations of Lantheus Holdings and Merger Sub to complete the merger are subject to the satisfaction of, or waiver by Lantheus Holdings, on or prior to the closing date of the following conditions:

- the accuracy in all respects as of the date of the merger agreement and as of the closing date of the merger as if made on such date of the representation and warranty made by Progenics in the merger agreement regarding the absence, since December 31, 2018, of any fact, circumstance, condition, development, change, event, occurrence or effect that has had or would reasonably be expected to have, individually or in the aggregate, a material adverse effect on Progenics. See “—Definition of ‘Material Adverse Effect’” beginning on page 157 of this joint proxy statement/prospectus for the definition of material adverse effect;
- the accuracy in all material respects as of the date of the merger agreement (disregarding all qualifications and exceptions contained in such representations and warranties relating to materiality or material adverse effect) and as of the closing date of the merger as if made on such date (or, in the case of representations and warranties given as of another specific date, as of that date) of certain representations and warranties made by Progenics in the merger agreement regarding, among other matters, its corporate existence, its capitalization, corporate authority relative to the merger agreement and the merger, and inapplicability of certain antitakeover laws, except, with respect to the representations and warranties with respect to capitalization of Progenics and its subsidiaries, for de minimis inaccuracies;
- the accuracy of all other representations and warranties made by Progenics in the merger agreement (disregarding all qualifications and exceptions contained in such representations and warranties relating to materiality or material adverse effect) as of the date of the merger agreement and as of the closing date of the merger as if made on such date (or, in the case of representations and warranties given as of another specified date, as of that date), except where the failure of such representations and warranties to be true and correct as so made does not constitute a material adverse effect on Progenics. See “—Definition of ‘Material Adverse Effect’” beginning on page 157 of this joint proxy statement/prospectus for the definition of material adverse effect;
- Progenics having performed or complied in all material respects with all agreements and covenants required to be performed by it under the merger agreement on or prior to the closing date;
- the absence of any fact, circumstance, condition, development, change, event, occurrence or effect that has had or would reasonably be expected to have, individually or in the aggregate with all other facts, circumstances, conditions, developments, changes, events, occurrences or effects, a material adverse effect on Progenics since the date of the merger agreement;
- Lantheus Holdings having received a certificate from the chief executive officer or the chief financial officer of Progenics confirming the satisfaction of the conditions described in the preceding five bullets; and

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- Lantheus Holdings having received an opinion of White & Case (or other nationally recognized tax or accounting firm in the United States reasonably acceptable to Progenics, Lantheus Holdings and Merger Sub) to the effect that the merger will be treated for U.S. federal income tax purposes as a reorganization within the meaning of Section 368(a) of the Code, which opinion will be substantially in the form attached to the merger agreement. In the event that Lantheus Holdings is unable to obtain the opinion of White & Case, Lantheus Holdings will use commercially reasonable efforts to obtain an opinion of another nationally recognized tax or accounting firm in the United States reasonably acceptable to the parties to the merger agreement to the same effect.

Additional Conditions to Completion for the Benefit of Progenics. In addition, the obligation of Progenics to complete the merger is subject to the satisfaction of, or waiver by Progenics, on or prior to the closing date of the following conditions:

- the accuracy in all respects as of the date of the merger agreement and as of the closing date of the merger as if made on such date of the representation and warranty made by Lantheus Holdings and Merger Sub in the merger agreement regarding the absence, since December 31, 2018, of any fact, circumstance, condition, development, change, event, occurrence or effect that has had or would reasonably be expected to have, individually or in the aggregate, a material adverse effect on Lantheus Holdings. See “—Definition of ‘Material Adverse Effect’” beginning on page 157 of this joint proxy statement/prospectus for the definition of material adverse effect;
- the accuracy in all material respects as of the date of the merger agreement (disregarding all qualifications and exceptions contained in such representations and warranties relating to materiality or material adverse effect) and as of the closing date of the merger as if made on such date (or, in the case of representations and warranties given as of another specific date, as of that date) of certain representations and warranties made by Lantheus Holdings and Merger Sub in the merger agreement regarding, among other matters, its corporate existence, its capitalization, corporate authority relative to the merger agreement and the merger, the opinion of its financial advisors in connection with the merger and the inapplicability of certain antitakeover laws, except, with respect to the representations and warranties with respect to capitalization of Lantheus Holdings and its subsidiaries, for de minimis inaccuracies;
- the accuracy of all other representations and warranties made by Lantheus Holdings and Merger Sub in the merger agreement (disregarding all qualifications and exceptions contained in such representations and warranties relating to materiality or material adverse effect) as of the date of the merger agreement and as of the closing date of the merger as if made on such date (or, in the case of representations and warranties given as of another specified date, as of that date), except where the failure of such representations and warranties to be true and correct as so made does not constitute a material adverse effect on Lantheus Holdings. See “—Definition of ‘Material Adverse Effect’” beginning on page 157 of this joint proxy statement/prospectus for the definition of material adverse effect;
- Each of Lantheus Holdings and Merger Sub having performed or complied in all material respects with all agreements and covenants required to be performed by it under the merger agreement on or prior to the closing date;
- Progenics having received a certificate from the chief executive officer or the chief financial officer of Lantheus Holdings confirming the satisfaction of the conditions described in the preceding four bullets; and
- Progenics having received an opinion of O’Melveny (or other nationally recognized tax or accounting firm in the United States reasonably acceptable to Progenics, Lantheus Holdings and Merger Sub) to the effect that the merger will be treated for U.S. federal income tax purposes as a reorganization within the meaning of Section 368(a) of the Code, which opinion will be substantially in the form attached to the merger agreement. In the event that Progenics is unable to obtain the opinion of O’Melveny, Progenics will use commercially reasonable efforts to obtain an opinion of another

nationally recognized tax or accounting firm in the United States reasonably acceptable to the parties to the merger agreement to the same effect.

Representations and Warranties

The merger agreement contains a number of representations and warranties made by Progenics, Lantheus Holdings and Merger Sub that are subject in some cases to exceptions and qualifications (including exceptions that are not material to the party making the representations and warranties and its subsidiaries, taken as a whole, and exceptions that do not have, and would not reasonably be expected to have, individually or in the aggregate, a material adverse effect on the party making the representations and warranties). See “—Definition of ‘Material Adverse Effect’” beginning on page 157 of this joint proxy statement/prospectus for the definition of material adverse effect for each of Progenics and Lantheus Holdings.

In the merger agreement Progenics and Lantheus Holdings have made representations and warranties regarding, among other topics:

- corporate existence, good standing and qualification to conduct business;
- subsidiaries;
- capitalization;
- due authorization, execution and validity of the merger agreement;
- corporate and governmental approvals necessary to complete the merger;
- inapplicability of antitakeover laws;
- absence of any conflict with or violation or breach of organizational documents or any conflict with or violation or breach of agreements, laws or regulations, creation or imposition of any lien on any asset of the applicable party and its respective subsidiaries, or suspension or revocation of any permit held by the applicable party as a result of the execution, delivery or performance of the merger agreement or completion of the merger;
- SEC filings, the absence of material misstatements or omissions from such filings and compliance with the Sarbanes-Oxley Act of 2002;
- financial statements;
- absence of undisclosed material liabilities;
- certain regulatory matters relating to, among other relevant authorities, the United States Food, Drug, and Cosmetic Act of 1938, as amended, the Public Health Service Act, and the U.S. Food and Drug Administration;
- information provided by or on behalf of the applicable party or its respective subsidiary for inclusion in disclosure documents to be filed with the SEC in connection with the merger;
- conduct of business in the ordinary course of business consistent with past practices and absence of changes that have had or would reasonably be expected to have, individually or in the aggregate, a material adverse effect on the applicable party, in each case since December 31, 2018 through the date of the merger agreement;
- the absence of any actions since December 31, 2018 through the date of the merger agreement that would constitute a breach of certain interim operating covenants of the applicable party if such action was taken between the date of the merger agreement and the closing date of the merger;
- litigation;
- compliance with laws;

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- permits and court orders;
- tax matters;
- real property matters;
- employees, employee benefit plans and labor matters;
- intellectual property matters;
- material contracts;
- material suppliers;
- environmental matters;
- insurance coverage;
- compliance with the Foreign Corrupt Practices Act of 1977, as amended, and anti-corruption laws in other jurisdictions;
- fairness opinion of its financial advisor;
- fees payable to financial advisors in connection with the merger; and
- transactions with affiliates.

The representations and warranties in the merger agreement do not survive completion of the merger.

See “—Explanatory Note Regarding the Merger Agreement and the Summary of the Merger Agreement: Representations, Warranties and Covenants in the Merger Agreement Are Not Intended to Function or Be Relied on as Public Disclosures” on page 150 of this joint proxy statement/prospectus.

Definition of “Material Adverse Effect”

Certain representations and warranties in the merger agreement are qualified by a “material adverse effect” on the party or parties making such representation or warranty. For purposes of the merger agreement, “material adverse effect” means, with respect to Progenics or Lantheus Holdings, as the case may be, any fact, circumstance, condition, development, change, event, occurrence or effect that (i) has or would reasonably be expected to have a material adverse effect on the business, assets, liabilities, condition (financial or otherwise) or results of operations of that party and its subsidiaries, taken as a whole, or (ii) would reasonably be expected to prevent, materially impair or materially delay the completion of the merger, except, in the case of clause (i) in this paragraph, no effect to the extent resulting from, arising out of or related to any of the following will be taken into account in determining whether there has been, or would reasonably be expected to be, a material adverse effect:

- changes directly arising out of the negotiation, public announcement, pendency or completion of the merger (except that such changes would be taken into account with respect to any representation or warranty that is expressly intended to address the consequences of the execution, delivery or performance of the merger agreement or the completion of the merger);
- changes generally affecting the economy or the financial, credit or securities markets;
- political or regulatory changes;
- changes in any of the businesses and industries in which that party or any of its subsidiaries operate;
- changes in law or in GAAP;
- acts of war (whether or not declared), cyberattacks, sabotage or terrorism, or any escalation or worsening of any such acts of war (whether or not declared), cyberattacks, sabotage or terrorism;

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- pandemics, earthquakes, floods, hurricanes, tornados, acts of God, any change resulting from weather conditions or other natural disasters;
- any decline, in and of itself, in the market price, or change in trading volume, of any securities of such party;
- any failure, in and of itself, by such party and its respective subsidiaries, as applicable, to meet any internal or public projections, forecasts, guidance, estimates, milestones, budgets or internal or published financial or operating predictions of revenue, earnings, cash flow or cash position;
- any stockholder class action, derivative or similar litigation, suit, action or proceeding in respect of the merger agreement (or the merger) or this joint proxy statement/prospectus (including breach of fiduciary duty and disclosure claims);
- (i) any action taken by such party at the written request of the other party or (ii) compliance by such party with the terms of, or the taking by such party of any action required by, the merger agreement, or the failure by such party to take any action prohibited by the merger agreement;
- any reduction in the credit rating of such party (provided that the events described in this bullet and the eighth and ninth bullets in this list will not prevent a determination that any change underlying such changes or failure has resulted in or contributed to a material adverse effect, unless such change is otherwise excepted by this definition);
- any regulatory or clinical changes relating to any product of Progenics or Lantheus Holdings, as applicable (including (i) any regulatory actions, requests, recommendations or decisions of any governmental authority relating to any product of such party or any other regulatory or clinical development relating to any product of such party and (ii) any clinical trials, studies, tests or results or announcements thereof with respect to any product of such party; and
- the research, development, testing, distribution, sale, supply, license, marketing, promotion, manufacturing or commercialization of any product of such party;
- except that any change referred to in the second, third, fourth, fifth, sixth and seventh bullets in this list may be taken into account in determining whether there has been, or would reasonably be expected to be, a material adverse effect to the extent, and only to such extent, such change has a disproportionate effect on such party and its subsidiaries, taken as a whole, relative to other similarly sized participants in the businesses, industries and geographic locations in which such party and its subsidiaries operate.

Conduct of Business Pending the Merger

From the date of merger agreement until the earlier of the effective time and the termination of the merger agreement, except (i) as set forth in the confidential disclosure letter delivered by each party to the other party concurrently with the execution of the merger agreement, (ii) as required by applicable law or as otherwise expressly provided for in the merger agreement or (iii) with prior written consent from the applicable party (which consent will not be unreasonably withheld, conditioned or delayed), each party will, and cause each of its subsidiaries to, conduct its business in the ordinary course of business consistent with past practice, and will use its commercially reasonable efforts to preserve intact its business organization and goodwill and relationships with all governmental authorities, self-regulatory organizations, providers of order flow, customers, suppliers, licensors, licensees, distributors, business associates and others having business dealings with it, to keep available the services of its current officers and key employees and to maintain its current rights and franchises, in each case, consistent with the party's past practice.

In addition to and without limiting the generality of the foregoing, except (i) as expressly set forth in the confidential disclosure letter delivered by Progenics to Lantheus Holdings concurrently with execution of the merger agreement, (ii) as otherwise expressly provided for in the merger agreement or (iii) as required by applicable law, from the date of the merger agreement until the earlier of the effective time of the merger and the

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termination of the merger agreement, without the prior written consent of Lantheus Holdings (which consent may not be unreasonably withheld, conditioned or delayed), Progenics and its subsidiaries are not permitted to, directly or indirectly:

- amend or modify any of its certificate of incorporation, by-laws or other organizational documents;
- declare, set aside, make or pay any dividend or other distribution (whether in cash, stock or property) in respect of any of its securities, other than dividends or distributions by a wholly-owned subsidiary of Progenics to Progenics or another wholly-owned subsidiary of Progenics;
- split, subdivide, consolidate, combine or reclassify any of its securities or issue or allot, or propose or authorize the issuance or allotment of, any other securities or equity rights in respect of, in lieu of, or in substitution for, any of its securities;
- repurchase, redeem or otherwise acquire any securities or equity rights of Progenics or any of its subsidiaries, other than (i) the acquisition or withholding by Progenics of shares of Progenics common stock in connection with the surrender of shares of Progenics common stock by holders of Progenics stock options in order to pay the exercise price thereof, (ii) the acquisition or withholding of shares of Progenics common stock to satisfy tax obligations with respect to awards granted pursuant to the Progenics stock plans and (iii) the acquisition by Progenics of any restricted shares in connection with the forfeiture of such awards;
- issue, allot, sell, grant, pledge or otherwise encumber any securities or equity rights, other than issuances of (i) shares of Progenics common stock in connection with the exercise of Progenics stock options issued prior to the date of the merger agreement pursuant to the Progenics stock plans in accordance with their terms as in effect on the date of the merger agreement and (ii) any securities of any Progenics' subsidiaries to Progenics or any other wholly-owned subsidiary of Progenics;
- merge or consolidate with any person, or acquire the securities in, or any material amount of assets of, any other person, other than (i) transactions solely among Progenics and one or more of its wholly-owned subsidiaries or solely among wholly-owned subsidiaries of Progenics or (ii) acquisitions of inventory or equipment in the ordinary course of business consistent with past practice;
- adopt or implement a plan of complete or partial liquidation or resolution providing for or authorizing such liquidation or a dissolution, restructuring, recapitalization or other reorganization of Progenics or any of its subsidiaries (other than the dissolution of any inactive subsidiary and reorganizations solely among Progenics' subsidiaries);
- sell, lease, license, subject to a lien (other than certain permitted liens), encumber or otherwise surrender, relinquish or dispose of any assets, property or rights owned or held by Progenics or any of its subsidiaries (including securities of any subsidiary of Progenics) except (i) pursuant to the terms of a contract of Progenics in effect as of the date of the merger agreement, other than if the sale, lease, license, lien, encumbrance, surrender, relinquishment or disposition would be, individually or in the aggregate, material and adverse to Progenics or any of its subsidiaries, or any contract of Progenics entered into after the date of the merger agreement in compliance with the merger agreement, (ii) sales or dispositions of inventory or tangible personal property in the ordinary course of business, (iii) transactions solely among Progenics and one or more of its wholly-owned subsidiaries or solely among its wholly-owned subsidiaries or (iv) non-exclusive licenses of intellectual property granted in the ordinary course of business consistent with past practice;
- make any loans, advances or capital contributions to, or investments in, any other person other than by Progenics or any of its wholly-owned subsidiaries to or in Progenics or any of its wholly-owned subsidiaries;
- create, incur, guarantee, assume or otherwise become liable for any indebtedness, issuances of debt securities, guarantees, loans or advances not in existence as of the date of the merger agreement;
- make or commit to make any capital expenditure other than as set forth in Progenics' capital budget;

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- except as required under applicable law or the terms of any benefit plan maintained by Progenics existing as of the date of the merger agreement, (i) pay any bonus or increase in any manner the compensation, bonus, pension, welfare, fringe or other benefits, severance or termination pay of any of the current or former directors, officers, employees or consultants of Progenics or any of its subsidiaries, other than increases in base salary to any such individuals who are not directors or officers of Progenics or any of its subsidiaries in the ordinary course of business consistent with past practice that do not exceed 4% individually or 3% in the aggregate, (ii) become a party to, establish, amend, commence participation in, terminate or commit itself to the adoption of any stock option plan or other stock-based compensation plan, or any compensation, severance, retention, pension, retirement, profit-sharing, welfare benefit, or other employee benefit plan or agreement with or for the benefit of any current or former directors, officers, employees or consultants of Progenics or any of the its subsidiaries (or newly hired employees), (iii) accelerate the vesting of or lapsing of restrictions with respect to any stock-based compensation or other long-term incentive compensation under any benefit plan maintained by Progenics, (iv) grant any new awards under any benefit plan maintained by Progenics, (v) amend or modify any outstanding award under any benefit plan maintained by Progenics, (vi) cause the funding of any rabbi trust or similar arrangement or take any action to fund or in any other way secure the payment of compensation or benefits under any benefit plan maintained by Progenics, (vii) enter into, amend or terminate any collective bargaining agreement or other agreement with a labor union, works council or similar organization, (viii) materially change any actuarial or other assumptions used to calculate funding obligations with respect to any benefit plan maintained by Progenics that is required by applicable law to be funded or change the manner in which contributions to such plans are made or the basis on which such contributions are determined, except as may be required by GAAP or applicable law, (ix) forgive any loans, or issue any loans (other than routine advances issued in the ordinary course of business) to any of Progenics' or its subsidiaries' directors, officers, contractors or employees, or (x) hire or engage any new employee or consultant or terminate the employment or engagement, other than for cause, of any employee or consultant if such employee or consultant will receive, or has received, annual base compensation in excess of \$125,000;
- settle or compromise any proceeding solely for monetary damages if the amount to be paid, waived, released or assigned by Progenics or any of its subsidiaries, exclusive of amounts covered by insurance, exceeds as to any such proceeding \$1,000,000 or as to all such proceedings in the aggregate \$3,000,000;
- enter into any consent decree, injunction or similar restraint or form of equitable relief in settlement of any proceeding, and, in each case, that includes any admission of wrongdoing or criminal act, and which does not provide for a general release of all claims against Progenics and its controlled affiliates;
- make, revoke or amend any material election relating to taxes;
- settle or compromise any proceeding relating to taxes;
- make a request for a written ruling of a taxing authority relating to taxes, other than any request for a determination concerning qualified status of any benefit plan maintained by Progenics intended to be qualified under Section 401(a) of the Code;
- enter into a written and legally binding agreement with a taxing authority relating to material taxes;
- except as required by law, change any of its methods, policies or practices of reporting income or deductions for U.S. federal income tax purposes from those employed in the preparation of its U.S. federal income tax returns for the taxable year ended December 31, 2018;
- consent to any extension or waiver of the limitation period applicable to any material tax claim or assessment;
- file any material amended tax return;
- incur any liability for taxes other than in the ordinary course of business;

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- take any action, cause any action to be taken, fail to take any action or fail to cause any action to be taken (including any action or failure to act otherwise permitted by the merger agreement) that would prevent the merger from constituting a tax-free reorganization under Section 368(a) and related provisions of the Code;
- modify or amend in any material respect, transfer, novate, assign or terminate, or waive any rights under, any material contract;
- enter into any successor agreement to an expiring material contract that changes the terms of the expiring material contract in a way that is materially adverse to Progenics and its subsidiaries, taken as a whole;
- except in the ordinary course of business consistent with past practice, enter into any new contract that would have been considered a material contract if it were entered into at or prior to the date of the merger agreement;
- change any method of accounting or accounting principles or practices by Progenics or any of its subsidiaries, except for any such change required by a change in GAAP, required by applicable law or required by a governmental authority;
- terminate or cancel, or amend or modify in any material respect, any material insurance policies maintained by it covering Progenics or any of its subsidiaries or their respective properties which is not replaced by a comparable amount of insurance coverage;
- transfer, abandon, allow to lapse, or otherwise dispose of any rights of intellectual property related to Progenics' products (to the extent Progenics or any of its subsidiaries has control over such actions, including pursuant to any contract to which Progenics or any of its subsidiaries is a party) or material intellectual property owned by Progenics that is subject to a registration or application with a governmental authority, except for abandonment of provisional patent applications or expiration of such intellectual property in accordance with the applicable statutory period;
- disclose any material trade secrets to any person other than Lantheus Holdings or its representatives, except under confidentiality agreements in the ordinary course of business consistent with past practice;
- voluntarily terminate, suspend, abrogate, amend or modify any permit in a manner materially adverse to Progenics and its subsidiaries, taken as a whole;
- commence any clinical trial in respect of any pharmaceutical product if commencing such trial would require Progenics to pay in funds in excess of \$1,000,000;
- enter into any new line of business that is material to Progenics and its subsidiaries, taken as a whole; or
- authorize, or agree or commit to do, any of the foregoing.

In addition to and without limiting the generality of the first paragraph in this section, except (i) as expressly set forth in the confidential disclosure letter delivered by Lantheus Holdings to Progenics concurrently with execution of the merger agreement, (ii) as otherwise expressly provided for in the merger agreement or (iii) as required by applicable law, from the date of the merger agreement until the earlier of the effective time of the merger and the termination of the merger agreement, without the prior written consent of Progenics (which consent will not be unreasonably withheld, conditioned or delayed), Lantheus Holdings and its subsidiaries are not permitted to, directly or indirectly:

- amend or modify any of its certificate of incorporation, by-laws or other organizational documents;
- declare, set aside, make or pay any dividend or other distribution (whether in cash, stock or property) in respect of any of its securities, other than dividends or distributions by wholly-owned subsidiaries of Lantheus Holdings to Lantheus Holdings or a wholly-owned subsidiary of Lantheus Holdings;

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- split, subdivide, consolidate, combine or reclassify any of its securities or issue or allot, or propose or authorize the issuance or allotment of, any other securities or equity rights in respect of, in lieu of, or in substitution for, any of its securities;
- repurchase, redeem or otherwise acquire any securities or equity rights of Lantheus Holdings or any of its subsidiaries, other than (i) the acquisition or withholding by Lantheus Holdings of shares of Lantheus Holdings common stock in connection with the surrender of shares of Lantheus Holdings common stock by holders of equity rights in order to pay the exercise price thereof, (ii) the acquisition or withholding of shares of Lantheus Holdings common stock to satisfy tax obligations with respect to awards granted pursuant to the Lantheus Holdings common stock plans and (iii) the acquisition by Lantheus Holdings of any restricted shares in connection with the forfeiture of such awards;
- issue, allot, sell, award, grant, pledge or otherwise encumber any securities or equity rights, other than issuances of (i) Lantheus Holdings common stock in connection with Lantheus Holdings equity awards issued prior to the date of the merger agreement pursuant to the Lantheus Holdings common stock plans in accordance with their terms as in effect on the date of the merger agreement, (ii) equity rights under the Lantheus Holdings common stock plans to any newly hired or promoted employees or to employees for retention purposes or to employees as part of the annual equity grant cycle, in each case, in the ordinary course of business consistent with past practice and (iii) any securities of any Lantheus Holdings' subsidiary to Lantheus Holdings or any other wholly-owned subsidiary of Lantheus Holdings;
- merge or consolidate with any person, or acquire the securities in, or any material amount of assets of, any other person other than (i) transactions solely among Lantheus Holdings and one or more of its wholly-owned subsidiaries or solely among wholly-owned subsidiaries of Lantheus Holdings or (ii) acquisitions of inventory or equipment in the ordinary course of business consistent with past practice;
- adopt or implement a plan of complete or partial liquidation or resolution providing for or authorizing such liquidation or a dissolution, restructuring, recapitalization or other reorganization of Lantheus Holdings or any of its subsidiaries (other than the dissolution of any inactive subsidiary and reorganizations solely among subsidiaries of Lantheus Holdings);
- make, revoke or amend any material election relating to taxes;
- settle or compromise any proceeding relating to taxes;
- make a request for a written ruling of a taxing authority relating to taxes, other than any request for a determination concerning qualified status of any Lantheus Holdings' benefit plan intended to be qualified under Section 401(a) of the Code;
- enter into a written and legally binding agreement with a taxing authority relating to material taxes;
- except as required by law, change any of its methods, policies or practices of reporting income or deductions for U.S. federal income tax purposes from those employed in the preparation of its U.S. federal income tax returns for the taxable year ended December 31, 2018;
- consent to any extension or waiver of the limitation period applicable to any material tax claim or assessment;
- file any material amended tax return;
- incur any liability for taxes other than in the ordinary course of business;
- take any action, cause any action to be taken, fail to take any action or fail to cause any action to be taken (including any action or failure to act otherwise permitted by the merger agreement) that would prevent the merger from constituting a tax-free reorganization under Section 368(a) and related provisions of the Code;

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- change any method of accounting or accounting principles or practices by Lantheus Holdings or any of its subsidiaries, except for any such change required by a change in GAAP, required by applicable law or required by a governmental authority;
- transfer, abandon, allow to lapse, or otherwise finally dispose of any rights to any material intellectual property owned by Lantheus Holdings, except for abandonment of provisional applications or expiration of intellectual property owned by Lantheus Holdings that is subject to a registration with a governmental authority in accordance with the applicable statutory period;
- disclose any material trade secrets of Lantheus Holdings or any of its subsidiaries to any person other than Progenics or its representatives, except under confidentiality agreements entered in the ordinary course of business consistent with past practice; or
- authorize, or agree or commit to do, any of the foregoing.

Obligations to Recommend the Adoption of the Merger Agreement and the Approval of the Stock Issuance

As discussed under “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Progenics’ Reasons for the Merger; Recommendation of the Progenics Board of Directors that Progenics Stockholders Adopt the Merger Agreement” beginning on page 116 of this joint proxy statement/prospectus, the Progenics Board unanimously recommends that Progenics stockholders vote “**FOR**” the merger agreement proposal. The Progenics Board, however, may make a change in recommendation under specified circumstances as discussed under “—No Solicitation” beginning on page 163 of this joint proxy statement/prospectus.

Similarly, as discussed under “Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Lantheus Holdings’ Reasons for the Merger; Recommendation of the Lantheus Holdings Board of Directors that Lantheus Holdings Stockholders Approve the Stock Issuance” beginning on page 102 of this joint proxy statement/prospectus, the Lantheus Holdings Board unanimously recommends that Lantheus Holdings stockholders vote “**FOR**” the stock issuance proposal. The Lantheus Holdings Board, however, may make a change in recommendation under specified circumstances as discussed under “—No Solicitation” beginning on page 163 of this joint proxy statement/prospectus.

No Solicitation

Subject to the exceptions described in this section, each of Progenics and Lantheus Holdings has agreed not to, and not to authorize or permit any of its subsidiaries to, and each of Progenics and Lantheus Holdings will use reasonable best efforts to cause its and its subsidiaries’ respective representatives not to, directly or indirectly, (i) initiate or solicit or knowingly facilitate, knowingly induce or knowingly encourage any inquiry or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, a takeover proposal (as defined below in this section), (ii) enter into, continue or otherwise participate in any discussions or negotiations regarding, furnish to any person any information or data with respect to, or cooperate in any way that would otherwise reasonably be expected to lead to, any proposal or offer that constitutes, or would reasonably be expected to lead to, any proposal or offer that constitutes, or would reasonably be expected to lead to, and takeover proposal, (iii) submit to the stockholders of Progenics or Lantheus Holdings, as applicable, for their approval or adoption any takeover proposal or (iv) agree or publicly announce an intention to take any of the foregoing actions. Further, subject to the exceptions described in this section, the Progenics Board or the Lantheus Holdings Board, as applicable, or any respective committee thereof, may not approve, declare advisable, adopt or recommend, or publicly propose to approve, declare advisable, adopt or recommend, or allow each of Progenics and Lantheus Holdings or its respective subsidiaries to execute or enter into, any agreement that is intended to, or would reasonably be expected to lead to, any takeover proposal.

Each of Progenics and Lantheus Holdings has agreed to, and to cause its respective subsidiaries to, and to use reasonable best efforts to cause its and their respective representatives to, immediately cease and cause to be

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terminated any existing activities, discussions or negotiations with any persons conducted prior to the date of the merger agreement with respect to any takeover proposal and request the prompt return or destruction of any confidential information previously furnished to such persons in connection therewith and immediately terminate the access of each such person to any electronic data room maintained by or on behalf of each party or its subsidiaries. Progenics, Lantheus Holdings and their respective subsidiaries may not modify, amend or terminate, or waive, release, fail to enforce or assign any provisions of, any confidentiality agreement (other than any standstill provision therein) to which it is a party relating to any takeover proposal or any inquiry, offer or proposal in connection therewith and will enforce, to the fullest extent permitted under applicable law, the provisions of any such agreement (other than any standstill provision therein). Without limiting the foregoing, any violation of the no solicitation covenant by a representative of either party will be deemed to be a breach of the no solicitation covenant by such party.

Notwithstanding the foregoing, if at any time prior to the approval of the merger agreement proposal by Progenics stockholders, in the case of Progenics, or at any time prior to the approval of the stock issuance proposal by Lantheus Holdings stockholders, in the case of Lantheus Holdings, Progenics or Lantheus Holdings, as applicable, receives a *bona fide* written takeover proposal after the date of the merger agreement which was not solicited and has not resulted from a breach of the solicitation restrictions described in the first two paragraphs of this section (under “—No Solicitation”), each of Progenics or Lantheus Holdings, as applicable, is permitted to:

- furnish information with respect to Progenics or Lantheus Holdings, as applicable, and its respective subsidiaries to the person making such takeover proposal and its representatives pursuant to and in accordance with a confidentiality agreement containing provisions no less restrictive in any substantive respect than those contained in the confidentiality agreement between Progenics and Lantheus Holdings, except that such confidentiality agreement need not contain a standstill provision, so long as the information provided to such person has previously been provided or is provided to Progenics or Lantheus Holdings, as applicable, prior to or substantially concurrently with (and in any event on the same calendar day as) the time it is provided to such person; and
- participate in discussions or negotiations with such person or its representatives regarding such takeover proposal.

However, Progenics and Lantheus Holdings may only take the actions described immediately above if the Progenics Board or the Lantheus Holdings Board, as applicable, determines in good faith (after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation), that (i) after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation, such takeover proposal is, or would reasonably be expected to lead to, a superior proposal (as defined below in this section) and (ii) after consultation with its outside legal counsel, the failure to furnish such information or participate in such discussions or negotiations with respect to such takeover proposal would reasonably be expected to be inconsistent with its fiduciary duties under applicable law.

In addition, if Progenics or Lantheus Holdings, as applicable, receives, directly or indirectly, any takeover proposal or any proposal, offer or inquiry with respect to, or that would reasonably be expected to lead to, any takeover proposal, such party must promptly provide (in any case within 24 hours) oral and written notice to the other party of (i) such takeover proposal, proposal, offer or inquiry, (ii) the identity of the person making any such takeover proposal, proposal, offer or inquiry and (iii) the economic and other material terms and conditions of any such takeover proposal, proposal, offer or inquiry (including an unredacted copy of all written materials provided by such person to Progenics or Lantheus Holdings, as applicable, in connection with such takeover proposal, proposal, offer or inquiry and any amendments or modifications thereto). Progenics or Lantheus Holdings, as applicable, must promptly (and in any event within 24 hours) keep the other party reasonably informed of any material developments with respect to any such takeover proposal, proposal, offer or inquiry (including any material changes thereto and copies of any additional written materials received by each of Progenics and Lantheus Holdings, its respective subsidiaries or their respective representatives, as applicable,

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from the person that submitted such takeover proposal or such proposal, offer or inquiry or such person's representatives).

Neither the Progenics Board nor the Lantheus Holdings Board is permitted to make a change in recommendation. However, at any time prior to the approval of the merger agreement proposal by Progenics stockholders, in the case of Progenics, or at any time prior to the approval of the stock issuance proposal by Lantheus Holdings stockholders, in the case of Lantheus Holdings, the Progenics Board or the Lantheus Holdings Board, as applicable, may make a change in recommendation in response to a superior proposal (that has not been withdrawn) or an intervening event (as defined below in this section) if:

- the Progenics Board or the Lantheus Holdings Board, as applicable, determines in good faith (after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation) that the failure to do so would be inconsistent with its fiduciary duties under applicable law;
- the Progenics Board or the Lantheus Holdings Board, as applicable, has first provided four business days' prior written notice to the other party that it is prepared to make a change in recommendation in response to a superior proposal or an intervening event, which notice will specify (i) in the case of a superior proposal, the material terms and conditions of the superior proposal that is the basis of the proposed action of the Progenics Board or the Lantheus Holdings Board (including the identity of the person making such superior proposal and a written summary of any material terms and conditions communicated orally), and must attach the most current unredacted version of the relevant agreement (if any) with the person making such superior proposal and unredacted copies of any other relevant documents, (ii) in the case of an intervening event, the material facts underlying, and the rationale and basis for, the determination that an intervening event has occurred, which four business day period would be extended for three business days following any amendment to the material terms of such superior proposal or a material change to the facts and circumstances of an intervening event;
- during such four business day period, Progenics or Lantheus Holdings, as applicable, and its representatives, to the extent reasonably requested by the other party, engaged in good faith negotiations with the other party to amend the merger agreement in such a manner (i) in the case of a superior proposal, that the takeover proposal ceases to constitute a superior proposal or (ii) in the case of an intervening event, to obviate the need to make a change in recommendation; and
- after taking into account any revised terms offered in writing by the other party, the Progenics Board or the Lantheus Holdings Board, as applicable, determines in good faith (i) in the case of a superior proposal, after consultation with its legal counsel and financial advisor, that such takeover proposal continues to constitute a superior proposal and (ii) in the case of a superior proposal or intervening event, after consultation with its outside legal counsel, that the failure to make a change in recommendation would continue to be inconsistent with its fiduciary duties under applicable law.

For purposes of this joint proxy statement/prospectus, "takeover proposal" means, with respect to Progenics or Lantheus Holdings as the context so requires, any inquiry, proposal or offer from any person, other than the other party and its subsidiaries, relating to any (i) direct or indirect acquisition (whether in a single transaction or a series of related transactions) of assets of each of Progenics and Lantheus Holdings and its respective subsidiaries, as applicable (including securities of any of its respective subsidiaries) equal to 15% or more of the consolidated assets of Progenics or Lantheus Holdings, as applicable, and its subsidiaries or to which 15% or more of the revenues of Progenics or Lantheus Holdings, as applicable, and its subsidiaries on a consolidated basis are attributable for the most recent fiscal year in which audited financial statements are then available, (ii) direct or indirect acquisition from Progenics or Lantheus Holdings, as applicable, or issuance (whether in a single transaction or a series of related transactions) of 15% or more of any class of equity or voting securities of Progenics or Lantheus Holdings, as applicable, (iii) tender offer or exchange offer that, if consummated, would result in such person beneficially owning 15% or more of any class of equity or voting securities of Progenics or Lantheus Holdings, as applicable, or (iv) merger, consolidation, share exchange, business combination, joint venture, reorganization, recapitalization, liquidation, dissolution or similar transaction or series of related

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transactions involving Progenics or Lantheus Holdings, as applicable, and its subsidiaries under which (A) such person would, directly or indirectly, acquire assets equal to 15% or more of the consolidated assets of Progenics or Lantheus Holdings, as applicable, and its respective subsidiaries or to which 15% or more of the revenues of Progenics or Lantheus Holdings, as applicable, and its respective subsidiaries, on a consolidated basis are attributable for the most recent fiscal year in which audited financial statements are then available, or (B) the stockholders or equityholders of such person immediately after giving effect to such transaction(s) would beneficially own 15% or more of any class of equity or voting securities of Progenics or Lantheus Holdings, as applicable, or the surviving or resulting entity in such transaction(s).

For purposes of this joint proxy statement/prospectus, “superior proposal” means, with respect to Progenics or Lantheus Holdings as the context so requires, an unsolicited *bona fide* written takeover proposal (with all references to 15% in the definition of takeover proposal being deemed to be references to 50%) that was first received after the date of the merger agreement that (i) did not result from a breach of the solicitation restrictions and related covenants described in this section (under “—No Solicitation”) and (ii) the Progenics Board or the Lantheus Holdings Board, as applicable, determines, in good faith, after consultation with its outside legal counsel and its financial advisor, (A) is reasonably likely to be consummated in accordance with its terms (if accepted), taking into account all legal, regulatory and financing aspects (including certainty of closing and, to the extent third party financing is required, that such financing is then fully committed on customary terms and conditions) of such takeover proposal and the person making the proposal and other aspects of the takeover proposal that the Progenics Board or the Lantheus Holdings Board, as applicable, deems relevant, and (B) if consummated, would result in a transaction more favorable from a financial point of view to the holders of Progenics common stock or Lantheus Holdings common stock, as applicable (solely in their capacity as such) than the merger.

For purposes of this joint proxy statement/prospectus, “intervening event” means, with respect to Progenics or Lantheus Holdings as the context so requires, a fact, circumstance, condition, development, change, event, occurrence or effect that is material to Progenics or Lantheus Holdings, as applicable, and its subsidiaries, taken as a whole, which was not known by, or if known, the effect of which was not reasonably foreseeable by, the Progenics Board or the Lantheus Holdings Board, as applicable, as of or prior to the date of the merger agreement (which change does not relate to a takeover proposal), and which becomes known to the Progenics Board or the Lantheus Holdings Board, as applicable, prior to the applicable stockholder approvals. However, none of the following will constitute, will be deemed to contribute to or will otherwise be taken into account in determining whether there has been an intervening event: (i) any changes in the market price or trading volume of Progenics common stock or Lantheus Holdings common stock, in and of itself; (ii) the fact that, in and of itself, Progenics or Lantheus Holdings, as applicable, and its subsidiaries exceeds any internal or published projections, forecasts, estimates or predictions in respect of revenues, earnings or other financial or operating metrics for any period ending after the date of the agreement (except that the underlying facts giving rise or contributing to events described in clauses (i) and (ii) may be taken into account in determining whether there has been an intervening event if such facts are not otherwise excluded under this definition); (iii) any regulatory or clinical changes relating to any product of Progenics or Lantheus Holdings (including (A) any regulatory actions, requests, recommendations or decisions of any governmental authority relating to any product of Progenics or Lantheus Holdings, as applicable, or any other regulatory or clinical development relating to any product of Progenics or Lantheus Holdings, as applicable, and (B) any clinical trials, studies, tests or results or announcements thereof with respect to any product of Progenics or Lantheus Holdings, as applicable); and (iv) the research, development, testing, distribution, sale, supply, license, marketing, promotion, manufacturing or commercialization of any product of Progenics or Lantheus Holdings, as applicable.

For purposes of this joint proxy statement/prospectus, “change in recommendation” means, with respect to Progenics or Lantheus Holdings as the context so requires, (i) withdrawing or qualifying (or amending or modifying in a manner adverse to Progenics or Lantheus Holdings, as applicable) or publicly proposing to so withdraw, qualify, amend or modify, the recommendation of the Progenics Board or the Lantheus Holdings Board, (ii) taking any public action or making any public statement in connection with the special meetings of

Progenics or Lantheus Holdings, as applicable, that is adverse to the recommendation of the Progenics Board or the Lantheus Holdings Board or (iii) recommending, adopting, endorsing or approving, or publicly proposing to recommend, adopt, endorse or approve, any takeover proposal.

Reasonable Best Efforts Covenant

Each of Lantheus Holdings and Progenics has agreed to use its reasonable best efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary, proper or advisable under applicable law to complete the merger, including (i) obtaining as promptly as reasonably practicable any necessary consents, approvals and waivers, (ii) making as promptly as practicable all necessary filings with any governmental authority (including the required filings under the HSR Act and foreign competition laws), self-regulatory organization or other third party necessary in connection with the completion of the merger, (iii) complying at the earliest practicable date with any request under the HSR Act for additional information, documents or other materials received by such party from the FTC, the Antitrust Division or by any other governmental authority in respect of such filings, submissions and declarations or the merger or (iv) acting in good faith and reasonably cooperating with the other party in connection with any such filings, submissions and declarations and in connection with resolving, and using reasonable best efforts to resolve, any investigation or other inquiry of any such agency or other governmental authority under applicable law or orders that are designed to prohibit, restrict or regulate actions having the purpose or effect of monopolization or restraint of trade with respect to any such filings, submissions and declarations or the merger.

In addition, to the extent not prohibited by applicable law, each of Lantheus Holdings and Progenics has agreed to (i) provide each other with copies of any material correspondence, filing or communication with any governmental authority or members of their respective staffs with respect to the merger agreement and the merger (after giving such other party a reasonable opportunity to discuss its content before it is submitted or filed with the relevant governmental authorities, and considering and taking account of all reasonable comments timely made by the other party with respect thereto) and (ii) ensure that the other party is given the opportunity to attend any meetings with or other appearances before any governmental authority with respect to the merger. Neither Lantheus Holdings nor Progenics may agree to any voluntary extension of any statutory deadline or waiting period or to any voluntary delay of the completion of the merger at the behest of any governmental authority without the prior written consent of the other party (such consent not to be unreasonably withheld, conditioned or delayed).

Progenics' and Lantheus Holdings' obligation to use their reasonable best efforts also includes, solely at Lantheus Holdings' election, (i) vigorously defending, contesting and objecting to any proceedings challenging the merger agreement or the merger that would otherwise prevent or materially impede, interfere with, hinder or delay the completion of the merger, (ii) executing settlements, undertakings, consent decrees, stipulations or other agreements, (iii) selling, divesting, holding separate or otherwise conveying, or agreeing to sell, divest, hold separate or otherwise convey, any particular assets or categories of assets or businesses of Lantheus Holdings or Progenics or any of their respective subsidiaries, (iv) terminating, relinquishing, modifying or waiving, or agreeing to terminate, relinquish, modify or waive, existing relationships, ventures, contractual rights, obligations or other arrangements of Lantheus Holdings or Progenics or any of their respective subsidiaries, (v) creating, or agreeing to create, any relationships, ventures, contractual rights, obligations or other arrangements of Lantheus Holdings or Progenics or any of their respective subsidiaries, (vi) taking or committing to take actions that after the closing date would limit the freedom of action of Lantheus Holdings or its affiliates (including the surviving corporation) with respect to, or its or their ability to retain, one or more of its or their businesses, product lines or assets and (vii) taking any other action as may be required by a governmental authority in order to (A) obtain all necessary consents, approvals, waivers, licenses, permits, franchises, certificates, registrations, variances, exemptions and authorizations of, and actions and non-actions by, any governmental authority or other third party as promptly as reasonably possible, but in any event before July 1, 2020, or (B) effect the expiration or termination of any waiting period, which would otherwise have the effect of preventing or delaying the closing beyond July 1, 2020. However, no action contemplated in the

immediately preceding sentence may be taken if such action would bind Lantheus Holdings or Progenics or any of their respective subsidiaries if the closing does not occur.

Obligations to Call Stockholders' Meetings

As promptly as reasonably practicable after the effectiveness of the registration statement on Form S-4, of which this joint proxy statement/prospectus forms a part, each of Progenics and Lantheus Holdings has agreed to, in consultation with the other party, in accordance with applicable law, the rules of any applicable self-regulatory organization and each party's organizational documents, establish a record date for and duly call and give notice of a meeting of its stockholders, at which Progenics will seek the vote of its stockholders required to adopt the merger agreement, and Lantheus Holdings will seek the vote of its stockholders required to approve the stock issuance. The record date for the meeting of Progenics stockholders and for the meeting of Lantheus Holdings stockholders must be the same.

In addition, as promptly as reasonably practicable after the effectiveness of the registration statement on Form S-4, of which this joint proxy statement/prospectus forms a part, each of Progenics and Lantheus Holdings is required to cause this joint proxy statement/prospectus to be mailed to its stockholders and duly convene and hold the meeting of its stockholders. The meeting of Progenics stockholders and the meeting of Lantheus Holdings stockholders must be held no later than 40 days after the record date for each such meeting, subject to the adjournments, postponements and delays thereof described in the following paragraphs of this section. Subject to the rights of the Progenics Board and the Lantheus Holdings Board, as applicable, to make a change in recommendation, as discussed under "—No Solicitation" beginning on page 163 of this joint proxy statement/prospectus, each of Progenics and Lantheus Holdings has agreed to take, or cause to be taken, all actions, and do or cause to be done all things, necessary, proper or advisable on its part to cause its stockholder approvals to be received at its special meeting or any adjournment, postponement or delay thereof. Each of Progenics and Lantheus Holdings has agreed to use its reasonable best efforts to cause the applicable stockholder approvals to be obtained at the meeting of its stockholders and will comply with all legal requirements applicable to such meeting.

Neither Progenics nor Lantheus Holdings may adjourn, postpone or otherwise delay the meeting of its stockholders without the prior written consent of the other party. However, either Progenics or Lantheus Holdings may, without the prior written consent of the other party, adjourn, postpone or otherwise delay the meeting of its stockholders (i) if, after consultation with the other party, it believes in good faith that such adjournment, postponement or delay is reasonably necessary to allow reasonable additional time to (A) solicit additional proxies necessary to obtain the required vote of its stockholders in connection with the merger or the stock issuance, as applicable, at such meeting, or (B) distribute any supplement or amendment to this joint proxy statement/prospectus that its board of directors has determined in good faith after consultation with outside legal counsel is necessary under applicable law and for such supplement or amendment to be reviewed by its stockholders prior to such meeting, (ii) for an absence of a quorum or (iii) if the special meeting of the other party has been adjourned, postponed or otherwise delayed, to the extent necessary to enable such special meeting to be held within a single period of 24 consecutive hours. Neither Progenics nor Lantheus Holdings may adjourn, postpone or otherwise delay a meeting of its stockholders more than a total of three times to solicit additional proxies or for the absence of a quorum without the prior written consent of the other party, and no adjournment, postponement or delay for the purposes described in this sentence may exceed a period of ten business days without the prior written consent of the other party.

In addition, without the prior written consent of the other party (which will not to be unreasonably withheld, conditioned or delayed), each of Progenics and Lantheus Holdings has agreed that the merger agreement proposal, in the case of the Progenics special meeting, and the stock issuance proposal, in the case of the Lantheus Holdings special meeting, are the only matters (other than matters of procedure and matters required by applicable law) that will be proposed to its respective stockholders at the special meetings.

Proxy Statement and Registration Statement Covenant

As promptly as reasonably practicable following the date of the merger agreement (i) Progenics and Lantheus Holdings have agreed to jointly prepare this joint proxy statement/prospectus and (ii) Lantheus Holdings has agreed to prepare and file with the SEC a registration statement on Form S-4 of which this joint proxy statement/prospectus forms a part. Each of Progenics and Lantheus Holdings has agreed to (i) furnish all information concerning itself and its affiliates to the other party, and provide such other assistance, as may be reasonably requested in connection with the preparation, filing and distribution of the registration statement and this joint proxy statement/prospectus and (ii) include all information reasonably requested by such other party to be included therein. All filings by Progenics or Lantheus Holdings, as applicable, with the SEC in connection with the merger and all mailings to their stockholders in connection with the merger are subject to the reasonable prior review and comment by the other party. Each of Lantheus Holdings and Progenics has agreed to use (i) commercially reasonable efforts to cause the registration statement and this joint proxy statement/prospectus to comply with the rules and regulations promulgated by the SEC and (ii) reasonable best efforts to have a registration statement on Form S-4 and this joint proxy statement/prospectus cleared by the SEC as promptly as practicable after its filing. Lantheus Holdings has agreed to use its reasonable best efforts to have the registration statement declared effective under the Securities Act as promptly as practicable after its filing and keep the registration statement effective for so long as is necessary to complete the merger.

Each of Progenics and Lantheus Holdings has agreed to, as promptly as practicable after the receipt thereof, provide the other party with copies of any written comments and advise the other party of any oral comments with respect to this joint proxy statement/prospectus or the registration statement received by such party from the SEC. Lantheus Holdings has agreed to provide Progenics with a reasonable opportunity to review and comment on any amendment or supplement to the registration statement and any communications prior to filing such with the SEC and will promptly provide Progenics with a copy of all such filings and communications made with the SEC.

Each of Progenics and Lantheus Holdings has agreed to mail the registration statement and this joint proxy statement/prospectus to its stockholders at the earliest reasonable practicable time after the registration statement is declared effective under the Securities Act. Each party will advise the other party, promptly after it receives notice thereof, of the issuance of any stop order, the suspension of the qualification of Lantheus Holdings common stock issuable in connection with the merger for offering or sale in any jurisdiction, or any request by the SEC for amendment of the joint proxy statement/prospectus or the registration statement.

If at any time prior to the effective time of the merger (i) any event or change occurs with respect to Progenics, Lantheus Holdings or any of their respective affiliates, officers or directors, which, in accordance with applicable law, should be set forth in an amendment of, or supplement to, the registration statement or the joint proxy statement/prospectus or (ii) any information relating to Progenics and Lantheus Holdings, or any of their respective affiliates, officers or directors, should be discovered by any of the parties which should be set forth in an amendment or supplement to the registration statement or the joint proxy statement/prospectus so that, in any such case, any such document would not include any misstatement of a material fact or omit to state any material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, the parties will file as promptly as reasonably practicable with the SEC a mutually acceptable (acting reasonably) amendment of, or supplement to, the registration statement or the joint proxy statement/prospectus and, to the extent required by law, disseminate the information contained in such amendment or supplement to the stockholders of Progenics and Lantheus Holdings.

Indemnification and Insurance

From and after the effective time of the merger, Progenics, as the surviving corporation in the merger, will, and Lantheus Holdings will cause Progenics to, indemnify and hold harmless, each person who is on the date of the merger agreement, was previously, or during the period from the date of the merger agreement through the date

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of the effective time of the merger will be, serving as a director, officer, employee or agent of Progenics or any of its subsidiaries or, at the request of or for the benefit of Progenics or any of its subsidiaries, as a director, trustee or officer of any other entity or any benefit plan maintained by Progenics or any of its subsidiaries, which individuals are collectively referred to in this joint proxy statement/prospectus as the indemnified persons, in the event of any threatened or actual proceeding, whether civil, criminal or administrative, based on, or arising out of, or pertaining to the fact that the indemnified person is or was a director (including in a capacity as a member of any board committee), officer, employee or agent of Progenics, any of its subsidiaries or any of their respective predecessors prior to the effective time of the merger (including with respect to any acts, facts, events or omissions occurring in connection with the approval of the merger agreement or the merger), which are collectively referred to in this joint proxy statement/prospectus as D&O claims, whether such D&O claim is made before, on or after the effective time of the merger against any expenses (including reasonable attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such indemnified person in connection with any such threatened or actual D&O claim. The merger agreement further provides that Progenics, as the surviving corporation, will, and Lantheus Holdings will cause the surviving corporation to, advance expenses (including reasonable attorneys' fees) incurred by an indemnified person who is on the date of the merger agreement, was previously, or during the period from the date of the merger agreement through the date of the effective time of the merger will be, serving as a director or officer of Progenics in defending any D&O claim in advance of the final disposition of such D&O claim upon receipt of an undertaking by or on behalf of such indemnified person to repay such amount if it is ultimately determined that such person is not entitled to be indemnified by Progenics.

Neither Lantheus Holdings nor Progenics, as the surviving corporation, are permitted to settle, compromise or consent to the entry of any judgment in any threatened or actual D&O claim for which indemnification could be sought by an indemnified person, unless such settlement, compromise or consent includes an unconditional release of such indemnified person from all liability arising out of such D&O claim or such indemnified person otherwise consents in writing to such settlement, compromise or consent. Lantheus Holdings and Progenics, as the surviving corporation, have agreed to cooperate with an indemnified person in the defense of any matter for which such indemnified person could seek indemnification.

For a period of six years after the effective time of the merger, the organizational documents of Progenics, as the surviving corporation, and its subsidiaries must contain provisions no less favorable with respect to elimination of liability of directors, indemnification of officers, directors, employees and agents and advancement of expenses than the corresponding provisions in the organizational documents of Progenics in existence on the date of the merger agreement. Such provisions may not be amended, repealed or otherwise modified for a period of six years after the effective time of the merger in any manner that would adversely affect the rights thereunder of any such individuals. Any agreement of any indemnified person with Progenics or any of its subsidiaries regarding elimination of liability, indemnification or advancement of expenses will survive the merger and will continue in full force and effect in accordance with its terms.

Prior to the closing date, Progenics will, or if Progenics is unable to, Lantheus Holdings will cause Progenics, as the surviving corporation, to, purchase a six year "tail" insurance policy for no more than 300% of the current annual premium paid by Progenics for the current policies of directors' and officers' liability insurance and fiduciary liability insurance maintained by Progenics with respect to claims arising from facts or events that occurred on or before the effective time of the merger. If Progenics fails to obtain such "tail" insurance policy, Lantheus Holdings or Progenics, as the surviving corporation, must maintain for a period of six years after the effective time of the merger such insurance or substitute policies of at least the same coverage and amounts and containing terms and conditions which are, in the aggregate, no less advantageous to the insured. However, the premium for such tail policy may not exceed 300% of the current annual premium paid by Progenics for such insurance existing as of the date of the merger agreement. If the annual premiums of such insurance exceed such amount, the surviving corporation will be obligated to obtain a policy with the greatest coverage available for a cost not exceeding such amount.

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If Lantheus Holdings or the surviving corporation or any of their respective successors or assigns (i) consolidates with or merges into any other person and will not be the continuing or surviving corporation or entity of such consolidation or merger, or (ii) transfers or conveys all or substantially all of its property and assets to any person, then, and in each such case, proper provision will be made so that the applicable successor, assign or transferee will assume the obligations set forth in the merger agreement.

The obligations of Lantheus Holdings or the surviving corporation will not be terminated or modified in such a manner as to adversely affect any indemnified person without the consent of such affected indemnified person. The rights of the indemnified person will survive completion of the merger and are intended to benefit, and will be enforceable by, each indemnified person as a third-party beneficiary of the applicable covenant contained in the merger agreement.

The surviving corporation will, and Lantheus Holdings will cause the surviving corporation to, pay all reasonable and documented out-of-pocket expenses, including reasonable attorneys' fees, that may be incurred by any indemnified person in enforcing the indemnity and other obligations contained in the merger agreement if a court of competent jurisdiction has determined by a final, nonappealable order or judgment such indemnified person is entitled to indemnification under the merger agreement.

Employee Matters

Lantheus Holdings has agreed to provide each individual who is employed by Progenics or any of its subsidiaries immediately prior to the completion of the merger who remains employed by Progenics as the surviving corporation, which such individuals are referred to in this joint proxy statement/prospectus as continuing employees, for a period extending until the earlier of the termination of such continuing employee's employment with such entities or the first anniversary of the closing date, with (i) base compensation and target annual cash incentive opportunity that are not less than the base compensation and target annual cash incentive opportunity provided by Progenics to such continuing employee immediately prior to the date of the merger agreement, and (ii) severance benefits that are substantially comparable in the aggregate to the severance benefits for which such employees were eligible immediately prior to the closing. In addition, Lantheus Holdings has agreed to provide each continuing employee, for a period extending until the earlier of the termination of such continuing employee's employment and December 31, 2020, with other employee benefits (excluding any defined benefit pension, and post-employment or retiree benefits) that are substantially comparable in the aggregate to the other employee benefits provided to such employees immediately prior to the closing of the merger.

Following the closing of the merger, each continuing employee will participate in Lantheus Holdings' 401(k) plan on terms substantially comparable with those of similarly situated employees of Lantheus Holdings and Lantheus Holdings will cause a 401(k) plan sponsored by Lantheus Holdings, Progenics as the surviving corporation, or one of their respective affiliates to accept rollovers of distributions from Progenics' 401(k) plan to such continuing employees to the extent elected by such continuing employees and to the extent permitted under applicable law or tax qualification requirements, and such rollovers will include in-kind rollovers of outstanding loan balances of such continuing employees to the extent elected by the continuing employees. As of the closing date of the merger, Lantheus Holdings will, or will cause Progenics as the surviving corporation or a relevant affiliate to, credit to continuing employees the amount of vacation time that such employees had accrued under any applicable benefit plans maintained by Progenics as of the closing date of the merger.

Except to the extent necessary to avoid the duplication of benefits, the surviving corporation will use commercially reasonable efforts to recognize the service of each continuing employee with Progenics or its affiliates before the effective time of the merger as if such service had been performed with Lantheus Holdings or its affiliates (i) for purposes of eligibility and vesting under any employee benefit plans (including Lantheus Holdings' 401(k) plan) and programs of Lantheus Holdings, of Progenics as the surviving corporation or any of their respective affiliates, which such plans are collectively referred to in this joint proxy statement/prospectus as the surviving corporation plans, in which the continuing employee participates after the effective time of the

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merger, and (ii) for benefit accrual purposes under any surviving corporation plan that is a vacation or severance plan in which the continuing employee participates after the effective time of the merger. Such recognition of service, however, will not apply for purposes of any plan or arrangement that is a defined benefit pension plan or that is grandfathered or frozen, either with respect to level of benefits or participation or for any post-retirement health or welfare plan.

With respect to any health and welfare plan maintained by the surviving corporation or its affiliates in which continuing employees are eligible to participate after the effective time of the merger, Progenics as the surviving corporation and its affiliates will use commercially reasonable efforts to (i) waive all limitations as to preexisting conditions and exclusions with respect to participation and coverage requirements applicable to such employees to the extent such conditions and exclusions were satisfied or did not apply to such employees under the welfare plans maintained by Progenics or its affiliates prior to the effective time of the merger and (ii) provide each continuing employee with credit for any co-payments and deductibles paid prior to the effective time of the merger in satisfying any analogous deductible or out of pocket requirements to the extent applicable under any such plan.

After the effective time of the merger, Lantheus Holdings will, or will cause Progenics as the surviving corporation or its affiliates to, assume and honor in accordance with their terms of all benefit plans maintained by Progenics that are deferred compensation plans, agreements and arrangements, severance and separation pay plans, agreements and arrangements, and written employment, severance, retention, incentive, change in control and termination agreements (including any change in control provisions therein) applicable to employees of Progenics, in the same manner and to the same extent that Progenics would be required to perform and honor such plans, agreements and arrangements if the merger had not been completed including any right to amend or terminate such plans, agreements and arrangements. Nothing in the merger agreement is intended to (i) be treated as an amendment to any particular benefit plan maintained by Progenics, (ii) prevent Lantheus Holdings from amending or terminating any of the benefit plans maintained by Lantheus Holdings or, after the effective time of the merger, any Progenics benefit plan in accordance with its terms, (iii) prevent Lantheus Holdings, after the effective time of the merger, from terminating the employment of any continuing employee or (iv) create any third-party beneficiary rights in any employee of Progenics or any of its subsidiaries, any beneficiary or dependent thereof, or any collective bargaining representative thereof, with respect to the compensation, terms and conditions of employment and/or benefits that may be provided to any continuing employee by Lantheus Holdings or Progenics or subsidiaries of Progenics or under any benefit plan which Lantheus Holdings or Progenics or subsidiaries of Progenics may maintain.

Certain Other Covenants and Agreements

The merger agreement contains certain other covenants and agreements, including the following covenants and agreements, among others, all of which are subject to certain exceptions and qualifications as described in the merger agreement:

- Progenics is required to, and is required to cause its subsidiaries to, (i) provide Lantheus Holdings and its representatives access during normal business hours to its and its subsidiaries' properties, books, records, contracts and personnel and (ii) furnish, as promptly as reasonably practicable, all other information with respect to Progenics as Lantheus Holdings may reasonable request;
- Progenics will use reasonable efforts to (i) continue to progress the Phase 3 CONDOR trial evaluating the diagnostic performance and clinical impact of PyL™ (18F-DCFPyL) to a readout of the top-line results and (ii) lock the main study databases for that trial by December 31, 2019. Progenics will grant Lantheus Holdings and its representatives unrestricted access to the main study databases once locked, and Progenics will also share with Lantheus Holdings and its advisors results of primary efficacy endpoints analysis within five business days after the main study databases are locked. Progenics will use reasonable efforts to provide Lantheus Holdings and its advisors with reasonable access and support from the trial's lead investigator, the contract research organization hosting the main database,

the contract research organization in charge of statistical analysis of the primary endpoints and the imaging core laboratory responsible for performing the central review of medical images. Progenics also authorized Lantheus Holdings to have performed an independent review and analysis of trials data contained in the main study databases by an independent statistician selected by Lantheus Holdings;

- each of Lantheus Holdings and Progenics is required to consult with the other before issuing any press release or other public statements or communications with respect to the merger and provide the other with an opportunity to review and comment upon any such press release, public statement or communication;
- each of Lantheus Holdings and Progenics is required to promptly notify the other after receiving or becoming aware of (i) any notice or other communication from any person alleging that the consent of that person is or may be required in connection with the merger, (ii) any fact, circumstance, condition, development, change, event, occurrence or effect that would have a material adverse effect on such party, (iii) any proceeding commenced or, to its knowledge, threatened against, relating to or otherwise involving Lantheus Holdings, Progenics or their respective subsidiaries, as the case may be, that relates to the completion of the merger and (iv) any fact, circumstance, condition, development, change, event, occurrence or effect that has occurred that would reasonably be expected to result in any of the conditions to the closing of the merger not being satisfied;
- Progenics is required to (i) promptly notify Lantheus Holdings of receipt by Progenics of any written communications from certain beneficial owners of five percent or more of the outstanding shares of Progenics common stock, (ii) provide Lantheus Holdings with a reasonable opportunity to review and comment on filings with any governmental authority or national securities exchange related to any such communication or any consent statement on Schedule 14C filed by any such holder, which comments Progenics is required to consider in good faith, (iii) keep Lantheus Holdings apprised of, and consult with Lantheus Holdings with respect to, the strategy related thereto, and (iv) obtain Lantheus Holdings' prior written consent (such consent not to be unreasonably withheld, conditioned or delayed) before agreeing to settle a dispute relating to any such holder if such settlement will bind or adversely affect Progenics or any of its subsidiaries after the effective time of the merger;
- Lantheus Holdings is required to (i) use its reasonable best efforts to cause the shares of Lantheus Holdings common stock to be issued in the merger to be approved for listing on the Nasdaq Global Market and (ii) within ten business days following the effective time of the merger, prepare and file with the SEC a registration statement on Form S-8 (or other appropriate form) relating to the shares of Lantheus Holdings common stock issuable with respect to the Lantheus Holdings stock options to be issued to the holders of Progenics stock options;
- prior to the effective time of the merger, each of Lantheus Holdings and Progenics is required to take all reasonable actions intended to cause any dispositions of Progenics common stock and acquisitions of Lantheus Holdings common stock resulting from the merger by each individual who is subject to the reporting requirements of Section 16(a) of the Exchange Act, to be exempt under Rule 16b-3 promulgated under the Exchange Act;
- if any "fair price," "business combination" or "control share acquisition" statute or other similar statute or regulation is or becomes applicable to the merger, Progenics is required to use all reasonable best efforts to grant such approvals and take such actions as are necessary so that the merger may be completed as promptly as practicable on the terms contemplated by the merger agreement and otherwise act to minimize the effects of any such statute or regulation on the merger;
- each of Lantheus Holdings and Progenics is required to (i) promptly advise each other orally and in writing of any proceeding brought by any of its respective stockholders against Progenics or Lantheus Holdings, as applicable, and/or their respective directors and (ii) keep the other party reasonably informed regarding any such proceeding;
- Progenics is required to give Lantheus Holdings the opportunity to participate in, subject to a customary joint defense agreement, but not control the defense or settlement of any such proceeding

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and give due consideration to Lantheus Holdings' advice with respect to such proceeding and not settle any such proceeding without the prior written consent of Lantheus Holdings (which consent may not be unreasonably withheld, conditioned or delayed);

- from the date of the merger agreement and through the closing date, each of Progenics and Lantheus Holdings agree to use commercially reasonable efforts to consider in good faith alternative transaction structures for the purpose of achieving certain business objectives of the surviving corporation and its affiliates after the closing of the merger; except that no such structures may result in a material adverse effect to Progenics, Lantheus Holdings or the surviving corporation including any material adverse effect on the qualification of the merger as a reorganization within the meaning of Section 368(a) of the Code and each party's determination as to whether to undertake such alternative transaction structures will be made at the sole discretion of such party;
- following the effective time of the merger, each of Lantheus Holdings and Progenics, as the surviving corporation in the merger, is required to use reasonable best efforts to take or cause to be taken all actions necessary to delist Progenics common stock from the Nasdaq Global Market and terminate its registration under the Exchange Act as soon as practicable after the effective time of the merger;
- Lantheus Holdings is required to take all action necessary to cause Merger Sub to perform its obligations under the merger agreement and to complete the merger on the terms and conditions set forth in the merger agreement;
- Lantheus Holding is required to vote or caused to be voted all shares of Progenics common stock owned, beneficially or of record, by it or any of its controlled affiliates in favor of the approval of the merger agreement proposal;
- Progenics is required to vote or caused to be voted all shares of Lantheus Holdings common stock owned, beneficially or of record, by it or any of its controlled affiliates in favor of the approval of the stock issuance proposal; and
- Progenics is required to, and is required to cause its subsidiaries to, take all reasonably necessary actions to (i) facilitate the termination on the closing date of all commitments in respect of the credit facility under the Loan Agreement, dated as of November 4, 2016, by and between Healthcare Royalty Partners III, L.P. and MNTX Royalties Sub LLC, (ii) repay in full on the closing date all outstanding obligations in respect of the indebtedness under such credit facility, and (iii) release any liens securing such indebtedness and guarantees in connection with such credit facility on the closing date, in each case pursuant to the delivery to Lantheus Holdings at least three business days prior to the closing of the merger of an executed payoff letter with respect to the credit facility from the applicable agent on behalf of the persons to whom such indebtedness is owed, except that the obligations of Progenics in this paragraph will be subject to Lantheus Holdings or Merger Sub providing or causing to be provided all funds required to effect all such repayments at or prior to the effective time of the merger.

Termination of the Merger Agreement

The merger agreement may be terminated at any time before the effective time of the merger, whether before or after Progenics stockholders have approved the merger agreement proposal or Lantheus Holdings stockholders have approved the stock issuance proposal, in the following circumstances:

- by mutual written consent of Lantheus Holdings and Progenics; or
- by either Lantheus Holdings or Progenics, if:
 - the merger has not been completed by July 1, 2020, which is referred to in this joint proxy statement/prospectus as an outside date termination event;
 - a governmental authority of competent jurisdiction has enacted a law or issued an order having the effect of making the merger illegal or otherwise prohibiting completion of the merger, in each case, that has become final and nonappealable;

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- Progenics stockholders fail to adopt the merger agreement upon a vote taken on the merger agreement proposal at the Progenics special meeting, which is referred to in this joint proxy statement/prospectus as a Progenics stockholder vote termination event; or
- Lantheus Holdings stockholders fail to approve the stock issuance upon a vote taken on the stock issuance proposal at the Lantheus Holdings special meeting, which is referred to in this joint proxy statement/prospectus as a Lantheus Holdings stockholder vote termination event.

However, the right to terminate the merger agreement pursuant to the foregoing reasons will not be available to Progenics or Lantheus Holdings if that party's failure to fulfill any obligation under the merger agreement has been the primary cause of, or directly resulted in, the failure of any such condition.

- by Lantheus Holdings, if:
 - Progenics has breached or failed to perform any of its representations, warranties or covenants contained in the merger agreement, which breach or failure to perform would result in a failure to satisfy any condition to completion of the merger related to the accuracy of its representations and warranties or the performance of its covenants and agreements, and such breach is incapable of being cured by Progenics prior to July 1, 2020 or is not cured by the earlier of 30 days following written notice to Progenics by Lantheus Holdings of such breach and July 1, 2020, which is referred to in this joint proxy statement/prospectus as a Progenics breach termination event. However, the right to terminate the merger agreement in respect of an inaccuracy of any representation or warranty or the failure to perform any covenant or agreement will not be available to Lantheus Holdings or Merger Sub if Lantheus Holdings or Merger Sub is then in breach of its representations, warranties, covenants or agreements that would cause the applicable condition to completion of the merger related to accuracy of its representations and warranties or performance of its covenants and agreements not to be satisfied;
 - Progenics or any of its subsidiaries or their respective representatives has willfully breached any of their respective obligations described under “—No Solicitation,” beginning on page 163 of this joint proxy statement/prospectus, which is referred to in this joint proxy statement/prospectus as a Progenics solicitation termination event; or
 - the Progenics Board (i) fails to include its recommendation to stockholders of Progenics to adopt the merger agreement in this joint proxy statement/prospectus, (ii) makes a change in recommendation, (iii) makes any public recommendation in connection with a tender offer or exchange offer that is subject to Regulation 14D under the Exchange Act other than a recommendation in a Solicitation/Recommendation Statement on Schedule 14D-9 against such tender offer or exchange offer and other than a “stop, look and listen” notice of the type contemplated by Rule 14d-9(f) promulgated under the Exchange Act, or (iv) if a takeover proposal (other than a takeover proposal subject to Regulation 14D) has been publicly announced or disclosed (other than by Lantheus Holdings, its affiliates or its representatives), fails to recommend against such takeover proposal or fails to reaffirm its recommendation on or prior to the earlier of (A) 10 business days after such takeover proposal has been publicly announced or disclosed and (B) five business days prior to the Progenics special meeting, which is referred to in this joint proxy statement/prospectus, in any case of (i), (ii), (iii) or (iv), as a Progenics change in recommendation termination event. However, Lantheus Holdings will not have the right to terminate the merger agreement pursuant to clauses (i), (ii) or (iv) in this paragraph if Progenics stockholders have adopted the merger agreement at its special meeting.
- by Progenics, if:
 - Lantheus Holdings or Merger Sub has breached or failed to perform any of its representations, warranties or covenants contained in the merger agreement, which breach or failure to perform would result in a failure to satisfy any condition to completion of the merger related to the accuracy of its representations and warranties or the performance of its covenants and agreements,

and such breach is incapable of being cured by Lantheus Holdings or Merger Sub prior to July 1, 2020 or is not cured by the earlier of 30 days following written notice to Lantheus Holdings or Merger Sub by Progenics of such breach and July 1, 2020, which is referred to in this joint proxy statement/prospectus as a Lantheus Holdings breach termination event. However, the right to terminate the merger agreement in respect of an inaccuracy of any representation or warranty or the failure to perform any covenant or agreement will not be available to Progenics if Progenics is then in breach of its representations, warranties, covenants or agreements that would cause the applicable condition to completion of the merger related to accuracy of its representations and warranties or performance of its covenants and agreements not to be satisfied;

- Lantheus Holdings or any of its subsidiaries or their respective representatives has willfully breached any of their respective obligations described under “—No Solicitation,” beginning on page 163 of this joint proxy statement/prospectus, which is referred to in this joint proxy statement/prospectus as a Lantheus Holdings solicitation termination event; or
- the Lantheus Holdings Board (i) fails to include its recommendation to stockholders of Lantheus Holdings to approve the stock issuance proposal in this joint proxy statement/prospectus, (ii) makes a change in recommendation, (iii) makes any public recommendation in connection with a tender offer or exchange offer that is subject to Regulation 14D under the Exchange Act other than a recommendation in a Solicitation/Recommendation Statement on Schedule 14D-9 against such tender offer or exchange offer and other than a “stop, look and listen” notice of the type contemplated by Rule 14d-9(f) promulgated under the Exchange Act, or (iv) if a takeover proposal (other than a takeover proposal subject to Regulation 14D) has been publicly announced or disclosed (other than by Progenics, its affiliates or its representatives), fails to recommend against such takeover proposal or fails to reaffirm its recommendation on or prior to the earlier of (A) 10 business days after such takeover proposal has been publicly announced or disclosed and (B) five business days prior to the Lantheus Holdings special meeting, which is referred to in this joint proxy statement/prospectus, in any case of (i), (ii), (iii) or (iv), as a Lantheus Holdings change in recommendation termination event. However, Progenics will not have the right to terminate the merger agreement pursuant to clauses (i), (ii) or (iv) in this paragraph if Lantheus Holdings stockholders has approved the stock issuance at its special meeting.

Termination Fees and Expenses

Progenics has agreed to pay Lantheus Holdings the Progenics termination fee of \$18,340,000 if the merger agreement is terminated under any of the following circumstances (such fee only to be paid once):

- a Progenics solicitation termination event;
- a Progenics change in recommendation termination event;
- a Progenics stockholder vote termination event if, at the time of such termination, Lantheus Holdings has the right to terminate the merger agreement pursuant to a Progenics solicitation termination event or a Progenics change in recommendation termination event; or
- an outside date termination event, a Progenics breach termination event, or a Progenics stockholder vote termination event, if (i) in the case of an outside date termination event or a Progenics breach termination event, a takeover proposal shall have been made to the Progenics Board or become publicly known, and not withdrawn, prior to the date of such termination, or, in the case of a Progenics stockholder vote termination event, a takeover proposal shall have been made to the Progenics Board or become publicly known, and not publicly withdrawn, prior to the date of the Progenics special meeting, and (ii) in each case, within 12 months of such termination, Progenics enters into a definitive agreement with any third party to consummate, or consummates, a takeover proposal (where references to 15% in the definition of “takeover proposal” will be deemed to be references to 50%).

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Lantheus Holdings has agreed to pay Progenics the Lantheus Holdings termination fee of \$18,340,000 if the merger agreement is terminated under any of the following circumstances (such fee only to be paid once):

- a Lantheus Holdings solicitation termination event;
- a Lantheus Holdings change in recommendation termination event;
- a Lantheus Holdings stockholder vote termination event if, at the time of such termination, Progenics has the right to terminate the merger agreement pursuant to a Lantheus Holdings solicitation termination event or a Lantheus Holdings change in recommendation termination event; or
- an outside date termination event, a Lantheus Holdings breach termination event, or a Lantheus Holdings stockholder vote termination event, if (i) in the case of an outside date termination event or a Lantheus Holdings breach termination event, a takeover proposal shall have been made to the Lantheus Holdings Board or become publicly known, and not withdrawn, prior to the date of such termination, or, in the case of a Lantheus Holdings stockholder vote termination event, a takeover proposal shall have been made to the Lantheus Holdings Board or become publicly known, and not publicly withdrawn, prior to the date of the Lantheus Holdings special meeting and (ii) in each case, within 12 months of such termination, Lantheus Holdings enters into a definitive agreement with any third party to consummate, or consummates, a takeover proposal (where references to 15% in the definition of “takeover proposal” will be deemed to be references to 50%).

In addition, if Progenics or Lantheus Holdings fails to pay in a timely manner any termination fees due pursuant to the merger agreement, then (i) such party will reimburse the other party for all costs and expenses (including disbursements and fees of counsel) incurred in the collection of such overdue amount, including in connection with any related proceedings commenced and (ii) such party will pay to the other party interest on the termination fee payable pursuant to the merger agreement from and including the date payment of such amount was due. Upon payment of the Progenics termination fee and Lantheus Holdings termination fee, none of Progenics, Lantheus Holdings, any of their respective subsidiaries or any of their respective former, current or future officers, directors, partners, stockholders, managers, members, affiliates or agents, as applicable, will have any further liability or obligation relating to or arising out of the merger agreement or the merger.

Willful Breach Damages

In the event that Progenics willfully breaches or fails to perform any of its covenants under the merger agreement, which breach or failure results in a material breach of the merger agreement (as finally determined by a court of competent jurisdiction), following any termination of the merger agreement, Progenics will pay to Lantheus Holdings damages of \$18,340,000, which is referred to in this joint proxy statement/prospectus as the willful breach damages payment. However, Progenics will not be required to pay the willful breach damages payment if it has already paid the Progenics termination fee.

Expense Reimbursement

If a Progenics stockholder vote termination event occurs and Lantheus Holdings is not otherwise entitled to the Progenics termination fee described under this section, then Progenics will pay to Lantheus Holdings the amount equal to the reasonable and documented out-of-pocket expenses incurred by Lantheus Holdings, Merger Sub and the other Lantheus Holdings subsidiaries in connection with the merger, such amount not to exceed \$5,240,000, which is referred to in this joint proxy statement/prospectus as the Lantheus Holdings expense reimbursement. If Progenics has reimbursed Lantheus Holdings for such expenses, a subsequent payment of the Progenics termination fee or the willful breach damages payment will be net of the amount of such expenses previously paid by Progenics.

In addition, if Progenics fails to pay the Lantheus Holdings expense reimbursement in a timely manner, then (i) Progenics will be required to reimburse Lantheus Holdings and Merger Sub for all costs and expenses

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(including disbursements and fees of counsel) incurred in the collection of such overdue amount, including in connection with any related proceedings commenced and (ii) Progenics will pay to Lantheus Holdings and Merger Sub interest on the Lantheus Holdings expense reimbursement payable from and including the date payment of such amount was due.

Other Expenses

Except as provided in the merger agreement, whether or not the merger is completed, all expenses incurred in connection with the merger agreement and merger will be paid by the party incurring such expenses.

Enforcement

Progenics and Lantheus Holdings have agreed that (i) irreparable damage would occur in the event that any provision of the merger agreement is not performed in accordance with its specific terms or is otherwise breached, (ii) the parties to the merger agreement are entitled to an injunction or injunctions to prevent breaches of the merger agreement and to enforce specifically its terms and provisions in any court of competent jurisdiction, in addition to any other remedy to which the parties are entitled at law or in equity and (iii) the right of specific enforcement is an integral part of the merger and without that right, neither Progenics nor Lantheus Holdings would have entered into the merger agreement. Progenics and Lantheus Holdings have agreed not to assert that a remedy of specific enforcement is unenforceable, invalid, contrary to law or inequitable for any reason, and not to assert that a remedy of monetary damages would provide an adequate remedy or that the parties otherwise have an adequate remedy at law. Progenics and Lantheus Holdings have acknowledged and agreed that any party seeking an injunction or injunctions to prevent breaches of the merger agreement and to enforce specifically the terms and provisions of the merger agreement are not required to provide any bond or other security in connection with any such order or injunction.

Third-Party Beneficiaries

The merger agreement does not confer upon any person other than the parties to the merger agreement any legal or equitable rights, benefits or remedies of any nature whatsoever, except, after the effective time of the merger:

- the right of the indemnified persons to enforce the obligations described under “—Indemnification and Insurance” beginning on page 169 of this joint proxy statement/prospectus;
- the right of Progenics stockholders to receive the merger consideration described under “—Merger Consideration” beginning on page 151 of this joint proxy statement/prospectus; and
- the right of holders of Progenics stock options described under “—Treatment of Progenics Stock Options” beginning on page 153 of this joint proxy statement/prospectus.

Amendments; Waivers

Amendments

The merger agreement may be amended by the parties to the merger agreement, by action taken or authorized by their respective board of directors, at any time before or after approval of the matters presented in connection with the merger agreement by the stockholders of Progenics or the stockholders of Lantheus Holdings, but, after such approval, no amendment will be made which by law or in accordance with the rules of any relevant stock exchange requires further approval by such stockholders without such further approval. The merger agreement may not be amended except by an instrument in writing signed on behalf of each of the parties to the merger agreement.

Waiver

At any time prior to the effective time of the merger, the parties to the merger agreement, by action taken or authorized by their respective boards of directors, may, to the extent legally allowed, (i) extend the time for the performance of any of the obligations or other acts of the other parties, (ii) waive any inaccuracies in the representations and warranties contained in the merger agreement or in any document delivered pursuant to the merger agreement and (iii) waive compliance with any of the agreements or, except with respect to obtaining stockholder approvals from respective stockholders, conditions contained in the merger agreement. The failure of any party to the merger agreement to assert any of its rights under the merger agreement or otherwise will not constitute a waiver of those rights.

INTERESTS OF PROGENICS' DIRECTORS AND EXECUTIVE OFFICERS IN THE MERGER

In considering the recommendation of the Progenics Board that you vote to adopt the merger agreement, you should be aware that Progenics' executive officers and directors may have interests in the merger that are or were different from, or in conflict with or be in addition to, those of Progenics stockholders generally. Members of the Progenics Board were aware of and considered these interests, at the time, among other matters, in evaluating and negotiating the merger agreement and the merger, approving the merger agreement and the merger, and in recommending to Progenics stockholders that the merger agreement be adopted. For more information, see the sections entitled "Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Background of the Merger and Certain Other Developments" and "Lantheus Holdings Proposal I: Approval of the Stock Issuance and Progenics Proposal I: Adoption of the Merger Agreement—Progenics' Reasons for the Merger; Recommendation of the Progenics Board of Directors that Progenics Stockholders Adopt the Merger Agreement" beginning on pages 82 and 116 of this joint proxy statement/prospectus. These interests are described in more detail, and certain of them are quantified, below.

Treatment of Progenics Stock Options

The general treatment of the Progenics stock options in the merger, including such awards held by Progenics' directors and executive officers, is described under "The Merger Agreement—Treatment of Progenics Stock Options" beginning on page 153 of this joint proxy statement/prospectus. Other than the Progenics stock options, Progenics has not granted any equity incentive awards to employees, directors or other service-providers that are currently outstanding.

Progenics stock options held by Progenics' executive officers that will be assumed by Lantheus Holdings at the effective time of the merger, which are referred to in this joint proxy statement/prospectus as assumed stock options, are subject to accelerated vesting if the executive's employment is terminated by the executive's employer without cause on or within 12 months following the merger, as set out in each executive officer's option agreements. In addition, Progenics stock options held by directors who are not employed by Progenics or any of its subsidiaries, which are referred to in this joint proxy statement/prospectus as the non-employee directors, and that are unvested immediately prior to the merger will fully vest on the merger, as set out in each director's option agreements.

Assuming the merger was completed on November 8, 2019, the estimated value of the Progenics stock options held by Progenics' executive officers as of that date (i.e. Mark Baker, Chief Executive Officer; Patrick Fabbio, Chief Financial Officer; Benedict Osorio, Chief Operating Officer; Bryce Tenbarge, Senior Vice President, Commercial; Vivien Wong, Executive Vice President, Development; and Asha Das, Chief Medical Officer) as a group is \$1,003,980 (with the option value for each executive being as follows: Mr. Baker—\$398,250; Mr. Fabbio—\$135,135; Mr. Osorio—\$70,785; Mr. Tenbarge—\$70,785; Dr. Wong—\$236,525; and Dr. Das—\$92,500). As noted above, Mr. Baker resigned as Progenics' Chief Executive Officer effective November 11, 2019, and his then-unvested Progenics stock options terminated on his resignation date. As a result, Mr. Baker will not be entitled to receive Lantheus Holdings stock options in exchange for Progenics stock options that were unvested as of November 11, 2019. The estimated value of the Progenics stock options held by Progenics' non-employee directors as a group is \$139,480 (with the option value for each non-employee director being as follows: Mr. Campbell—\$11,480; Ms. Ferrante—\$56,800; Mr. Scheinberg—\$35,600; and Ms. Williams—\$35,600). In addition, the option values for Mr. Crowley and Mr. Kishbauch, who each resigned from the Progenics board of directors effective October 17, 2019, are \$97,900 and \$24,800, respectively. These option values were determined using an estimated value of Progenics common stock of \$5.30 per share (which is the average of the closing prices for a share of Progenics common stock for the five trading days following the first public announcement of the merger) and subtracting the applicable exercise price of the option, with no value being assigned to an option with a per-share exercise price of \$5.30 or more.

For an estimate of the value of the Progenics stock options held by each of Progenics' named executive officers that are subject to accelerated vesting as described above, see the section entitled "Quantification of Potential Payments and Benefits to Progenics' Named Executive Officers in Connection with the Merger—Golden Parachute Compensation" below.

Retention Payment Agreements

Approximately one-half of Progenics' employees, including each of Progenics' executive officers (other than Mr. Baker), are party to an agreement, which is referred to in this joint proxy statement/prospectus as a retention payment agreement, that provides a retention incentive for the award recipient to remain employed with Progenics and sustain Progenics' operations through the closing of the merger and for a period of up to six months after the closing.

Each retention payment opportunity provides that if the award recipient remains employed with Progenics through the closing, and the closing occurs by July 1, 2020, the award recipient will be entitled to a payment of 50 percent of his or her total retention payment opportunity. If the closing occurs by July 1, 2020 and the award recipient remains employed with Progenics for six months after the closing (or the award recipient's employment is terminated during that six-month period by Progenics without cause, by the award recipient for good reason, or due to the award recipient's death or disability, as such terms are defined in the applicable retention payment agreement), the award recipient will be entitled to a payment of the remaining 50 percent of his or her total retention payment opportunity. For these purposes, "cause" is generally defined as the award recipient's willful and continued failure to substantially perform his or her duties to Progenics, conviction of a felony or other crime involving moral turpitude, engagement in malfeasance, fraud or dishonesty of a material nature in connection with his or her position with Progenics, or other willful act that materially damages the reputation of Progenics; and "good reason" is generally defined as a material reduction in the award recipient's rate of base salary or target annual cash incentive opportunity or a requirement that the award recipient relocate his or her principal place of employment outside of a 75-mile radius of New York City.

The total retention payment opportunity for each of Progenics' executive officers other than Mr. Baker is \$180,000. As noted above, Mr. Baker was not awarded a retention payment. He resigned as Progenics' Chief Executive Officer effective November 11, 2019.

Severance Benefits

Except for the potential accelerated vesting of stock options or retention payments under the applicable option agreement or retention payment agreement as described above, Progenics has no employment or other agreements with any of its named executive officers that provide for severance benefits.

Indemnification and Insurance

Pursuant to the terms of the merger agreement, Progenics' directors and officers will be entitled to certain ongoing indemnification and coverage under directors' and officers' liability insurance policies. See the section entitled "The Merger Agreement—Indemnification and Insurance" beginning on page 169 of this joint proxy statement/prospectus for a description of such ongoing indemnification and coverage obligations.

Quantification of Potential Payments and Benefits to Progenics' Named Executive Officers in Connection with the Merger

This section sets forth the information required by Item 402(t) of the SEC's Regulation S-K regarding estimated compensation payable to each of Progenics' named executive officers (i.e. Mr. Baker, Mr. Fabbio, Mr. Osorio, Mr. Tenbarge, and Dr. Wong) that is based on, or otherwise relates to, the merger. This compensation is referred to as "golden parachute" compensation by the applicable SEC disclosure rules, and in this joint proxy statement/prospectus such term is used to describe the merger-related compensation payable to Progenics' named executive officers. The "golden parachute" compensation payable to these individuals is subject to a non-binding, advisory vote of Progenics stockholders, as described below.

The table below sets forth, for the purposes of this golden parachute disclosure, the estimated amount of payments and benefits that each of Progenics' named executive officers would receive, assuming that (1) the

effective time of the merger occurred on November 8, 2019 (which is the assumed date solely for purposes of this golden parachute compensation disclosure), and (2) the employment of each of Progenics’ named executive officers was terminated by Progenics without cause at such time. The amounts in the table and notes below are determined using the merger consideration of \$5.30 per share (which, in accordance with SEC rules, is the average of the closing prices for a share of Progenics common stock for the first five trading days following the public announcement of the merger), and are based on multiple assumptions that may or may not actually occur or be accurate on the relevant date, including the assumptions described in the footnotes to the table. The amounts in the table and notes below are based upon the named executive officer’s retention payment opportunity and outstanding equity awards as of November 8, 2019. As a result of the foregoing assumptions, the actual amounts, if any, to be received by an executive officer may materially differ from the amounts set forth below. In addition, as noted above, Mr. Baker resigned as Progenics’ Chief Executive Officer effective November 11, 2019, and his then-unvested Progenics’ stock options terminated on that date. As a result, Mr. Baker will not receive the amount listed in the table under the heading “Golden Parachute Compensation.”

Golden Parachute Compensation

Named Executive Officer	Cash (\$)(1)	Equity (\$)(2)	Perquisites/ Benefits (\$)	Tax Reimbursement (\$)	Other (\$)	Total (\$)
Mark R. Baker	0	150,150	0	0	0	150,150
Patrick Fabbio	180,000	70,785	0	0	0	250,785
Benedict Osorio	180,000	70,785	0	0	0	250,785
Bryce Tenbarge	180,000	70,785	0	0	0	250,785
Vivien Wong	180,000	70,785	0	0	0	250,785

- (1) The amount reported in this column for each named executive officer represents the aggregate potential cash retention payment the named executive officer would be entitled to receive from Progenics under his/her retention payment agreement as described above under “—Retention Payment Agreements.” If the closing of the merger occurs by July 1, 2020, the award recipient will be entitled to a payment of 50 percent of his or her total retention payment opportunity. This payment would be a “single-trigger” payment that is payable upon the closing of the merger. If the closing of the merger occurs by July 1, 2020 and the executive remains employed with Progenics for six months after the closing of the merger (or the award recipient’s employment is terminated during that six-month period by Progenics without cause, by the award recipient for good reason, or due to the award recipient’s death or disability, as such terms are defined in the applicable retention payment agreement), the award recipient will be entitled to a payment of the remaining 50 percent of his or her total retention payment opportunity. This payment would be a “double-trigger” payment as it is contingent on the closing of the merger plus additional service or certain terminations of employment following the closing. Mr. Baker is not a party to a retention payment agreement with Progenics.
- (2) As described above under “—Treatment of Progenics Stock Options”, the outstanding Progenics stock options held by the named executive officers will be assumed by Lantheus Holdings at the effective time and will be converted into options to purchase shares of Lantheus Holdings common stock based on the exchange ratio established in the merger of 0.2502 of a share of Lantheus Holdings common stock for each share of Progenics common stock. To the extent these options are unvested, they will fully accelerate on a “double-trigger” basis if the executive’s employment is terminated by the executive’s employer without cause on or within 12 months following the merger. For purposes of this note and the table above, the value of the Progenics stock options is calculated by multiplying (i) the number of shares of Progenics common stock subject to the portion of the applicable Progenics stock option that was outstanding and vested on November 8, 2019 and would accelerate upon such a termination of the named executive officer’s employment and (ii) the assumed value of a share of Progenics common stock of \$5.30 (calculated as described above) less the applicable exercise price of the option. To the extent any unvested option held by a named executive officer has a per-share exercise price greater than or equal to \$5.30, no value has been included in this table with respect to that option.

**LANTHEUS HOLDINGS PROPOSAL II: ADJOURNMENT OF THE
LANTHEUS HOLDINGS SPECIAL MEETING**

Lantheus Holdings stockholders are being asked to approve a proposal that will give the Lantheus Holdings Board authority to adjourn the Lantheus Holdings special meeting from time to time if necessary to solicit additional proxies if there are not sufficient votes at the time of the Lantheus Holdings special meeting, or any adjournment or postponement thereof, to approve the stock issuance proposal. If this proposal is approved, the Lantheus Holdings special meeting could be adjourned to any date. Any determination of whether it is necessary to adjourn the Lantheus Holdings special meeting (or any adjournment or postponement thereof) to solicit additional proxies will be made solely by Lantheus Holdings consistent with the terms of the merger agreement or with the consent of Progenics.

If the Lantheus Holdings special meeting is adjourned, Lantheus Holdings stockholders who have already submitted their proxies will be able to revoke them at any time prior to their use. If you sign and return a proxy and do not indicate how you wish to vote on any proposal, or if you indicate how you wish to vote on the stock issuance proposal and leave the Lantheus Holdings adjournment proposal blank, your shares will be voted in favor of the Lantheus Holdings adjournment proposal even if you voted against the stock issuance proposal.

The affirmative vote of the holders of a majority of shares of Lantheus Holdings common stock present in person or represented by proxy at the Lantheus Holdings special meeting by Lantheus Holdings stockholders entitled to vote thereat (assuming a quorum is present) will be required to approve the Lantheus Holdings adjournment proposal. In the absence of a quorum, the Lantheus Holdings special meeting may be adjourned by the Chairperson of the meeting.

THE LANTHEUS HOLDINGS BOARD UNANIMOUSLY RECOMMENDS THAT LANTHEUS HOLDINGS STOCKHOLDERS VOTE “FOR” THE LANTHEUS HOLDINGS ADJOURNMENT PROPOSAL.

PROGENICS PROPOSAL II: ADJOURNMENT OF THE PROGENICS SPECIAL MEETING

Progenics stockholders are being asked to approve a proposal that will give the Co-Chairs of the Progenics Board authority to adjourn the Progenics special meeting from time to time if necessary to solicit additional proxies if there are not sufficient votes to adopt the merger agreement at the time of the Progenics special meeting or any adjournment or postponement thereof. If this proposal is approved, the Progenics special meeting could be adjourned to any date. Any determination of whether it is necessary to adjourn the Progenics special meeting (or any adjournment or postponement thereof) to solicit additional proxies will be made solely by Progenics consistent with the terms of the merger agreement or with the consent of Lantheus Holdings.

If the Progenics special meeting is adjourned, Progenics stockholders who have already submitted their proxies will be able to revoke them at any time prior to their use. If you sign and return a proxy and do not indicate how you wish to vote on any proposal, or if you indicate how you wish to vote on the merger agreement proposal or the Progenics compensation advisory proposal and leave the Progenics adjournment proposal blank, your shares will be voted in favor of the Progenics adjournment proposal even if you voted against one or more of the other proposals.

If you sign and return a proxy and do not indicate how you wish to vote on any proposal, or if you indicate how you wish to vote on the merger agreement proposal or the Progenics compensation advisory proposal and leave the Progenics adjournment proposal blank, your shares will be voted in favor of the Progenics adjournment proposal even if you voted against one or more of the other proposals.

The affirmative vote of the holders of a majority of the shares of Progenics common stock present in person or represented by proxy at the Progenics special meeting and entitled to vote thereat (whether or not a quorum, as defined in Progenics' by-laws, is present) will be required to approve the Progenics adjournment proposal.

THE PROGENICS BOARD UNANIMOUSLY RECOMMENDS THAT PROGENICS STOCKHOLDERS VOTE "FOR" THE PROGENICS ADJOURNMENT PROPOSAL.

PROGENICS PROPOSAL III: ADVISORY VOTE ON MERGER-RELATED EXECUTIVE COMPENSATION ARRANGEMENTS

Pursuant to Section 14A of the Exchange Act and Rule 14a-21(c) thereunder, Progenics is seeking a non-binding, advisory stockholder approval of the compensation of Progenics' named executive officers that is based on or otherwise relates to the merger as disclosed above in the section entitled "Interests of Progenics' Executive Officers and Directors in the Merger—Quantification of Potential Payments and Benefits to Progenics' Named Executive Officers in Connection with the Merger." The proposal gives Progenics stockholders the opportunity to express their views on the merger-related compensation of Progenics' named executive officers.

Accordingly, Progenics is asking its stockholders to vote in favor of the adoption of the following resolution, on a non-binding, advisory basis:

"RESOLVED, that the compensation that will or may be paid or become payable to Progenics' named executive officers, in connection with the merger, and the agreements or understandings pursuant to which such compensation will or may be paid or become payable, in each case as disclosed pursuant to Item 402(t) of Regulation S-K in the section titled "Interests of Progenics' Executive Officers and Directors in the Merger—Quantification of Potential Payments and Benefits to Progenics' Named Executive Officers in Connection with the Merger" above are hereby APPROVED."

The vote on the Progenics compensation advisory proposal is a vote separate and apart from the vote on the merger agreement proposal. Accordingly, you may vote to approve the merger agreement proposal and vote against the Progenics compensation advisory proposal and vice versa. If the merger is completed, the merger-related compensation may be paid to Progenics' named executive officers to the extent payable in accordance with the terms of the compensation agreements and arrangements even if Progenics stockholders fail to approve the Progenics compensation advisory proposal.

THE PROGENICS BOARD UNANIMOUSLY RECOMMENDS THAT PROGENICS STOCKHOLDERS VOTE "FOR" THE COMPENSATION ADVISORY PROPOSAL.

DESCRIPTION OF LANTHEUS HOLDINGS CAPITAL STOCK

The following description of the terms of Lantheus Holdings capital stock is a summary only and is qualified by reference to the relevant provisions of Delaware law, Lantheus Holdings' certificate of incorporation and Lantheus Holdings' by-laws. Copies of Lantheus Holdings' certificate of incorporation and Lantheus Holdings' by-laws are incorporated by reference and will be sent to holders of shares of Progenics common stock free of charge upon written or telephonic request. See "Comparison of Stockholder Rights" and "Where You Can Find More Information" beginning on pages 197 and 222, respectively, of this joint proxy statement/prospectus.

Lantheus Holdings Common Stock

As of the date of this joint proxy statement/prospectus, Lantheus Holdings is authorized to issue up to 250,000,000 shares of common stock, \$0.01 par value per share. As of November 8, 2019, approximately 39,248,092 shares of common stock were outstanding. The common stock is listed on the Nasdaq Global Market under the symbol "LNTH."

Dividends

Holders of common stock are entitled to receive dividends out of any assets legally available for payment of dividends as may from time to time be declared by the Lantheus Holdings Board, subject to the rights of the holders of the preferred stock.

Voting

Each holder of common stock is entitled to one vote per share on all matters requiring a vote of the stockholders, including, without limitation, the election of directors. The holders of common stock do not have cumulative voting rights.

Rights Upon Liquidation

In the event of Lantheus Holdings' voluntary or involuntary liquidation, dissolution, or winding up, the holders of common stock will be entitled to share equally in Lantheus Holdings' assets available for distribution after payment in full of all debts and after the holders of preferred stock have received their liquidation preferences in full.

Board of Directors

Lantheus Holdings' certificate of incorporation provides that the Lantheus Holdings Board shall be divided into three classes designated Class I, Class II and Class III. Each class shall consist, as nearly as may be possible, of one-third of the total number of directors constituting the entire board of directors. Each class of directors will serve a term of three years, and the class of directors whose term expires will be elected by majority vote at the annual meeting of Lantheus Holdings stockholders for the election of directors at which a quorum is present and shall serve until the third succeeding annual meeting of stockholders and until their respective successors have been elected and qualified. If the number of directors is changed, any increase or decrease shall be apportioned among the classes in such a manner as the board of directors shall determine so as to maintain the number of directors in each class as nearly equal as possible, but in no case will a decrease in the number of directors shorten the term of any incumbent director.

Miscellaneous

Shares of common stock are not redeemable and have no subscription, conversion or preemptive rights.

Lantheus Holdings Preferred Stock

Lantheus Holdings is authorized to issue up to 25,000,000 shares of preferred stock, par value \$0.01 per share. As of November 8, 2019, no shares of preferred stock were outstanding. Subject to limitations prescribed by law, the Lantheus Holdings Board is also authorized at any time to:

- issue one or more series of preferred stock;
- determine the designation for any series by number, letter or title that shall distinguish the series from any other series of preferred stock; and
- determine the number of shares in any series.

The Lantheus Holdings Board is authorized to determine, for each series of preferred stock the following information:

- whether dividends on that series of preferred stock will be cumulative and, if so, from which date;
- the dividend rate;
- the dividend payment date or dates;
- the liquidation preference per share of that series of preferred stock, if any;
- any conversion provisions applicable to that series of preferred stock;
- any redemption or sinking fund provisions applicable to that series of preferred stock;
- the voting rights of that series of preferred stock, if any; and
- the terms of any other preferences or special rights applicable to that series of preferred stock.

The preferred stock, when issued, will be fully paid and nonassessable.

Dividends

Holders of preferred stock will be entitled to receive, when, as and if declared by the Lantheus Holdings Board, cash dividends at the rates and on the dates as set forth in the applicable certificate of designations, as may be filed from time to time with the Secretary of State of the State of Delaware. No such certificates of designation have been filed as of the date of this joint proxy statement/prospectus. Generally, no dividends will be declared or paid on any series of preferred stock unless full dividends for all series of preferred stock, including any cumulative dividends still owing, have been or contemporaneously are declared and paid. When those dividends are not paid in full, dividends will be declared pro-rata so that the amount of dividends declared per share on each series of preferred stock will bear to each other series the same ratio that accrued dividends per share for each respective series of preferred stock bear to aggregate accrued dividends for all outstanding shares of preferred stock. In addition, generally, unless all dividends on the preferred stock have been paid, no dividends will be declared or paid on the common stock and Lantheus Holdings may not redeem or purchase any common stock.

Payment of dividends on any series of preferred stock may be restricted by loan agreements, indentures and other agreements governing certain transactions Lantheus Holdings may enter into.

Convertibility

No series of preferred stock will be convertible into, or exchangeable for, other securities or property except as set forth in the applicable certificate of designations, as may be filed from time to time with the Secretary of State of the State of Delaware.

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Redemption and Sinking Fund

No series of preferred stock will be redeemable or receive the benefit of a sinking fund except as set forth in the applicable certificate of designations, as may be filed from time to time with the Secretary of State of the State of Delaware.

Shares of preferred stock that Lantheus Holdings redeems or otherwise reacquires will resume the status of authorized and unissued shares of preferred stock undesignated as to series, and will be available for subsequent issuance.

Liquidation

In the event Lantheus Holdings voluntarily or involuntarily liquidates, dissolves or winds up Lantheus Holdings' affairs, the holders of each series of preferred stock will be entitled to receive the liquidation preference per share specified in the applicable certificate of designation, as may be filed from time to time with the Secretary of State of the State of Delaware, plus any accrued and unpaid dividends. Holders of preferred stock will be entitled to receive these amounts before any distribution is made to the holders of common stock.

If the amounts payable to preferred stockholders are not paid in full, the holders of preferred stock will share ratably in any distribution of assets based upon the aggregate liquidation preference for all outstanding shares for each series. After the holders of shares of preferred stock are paid in full, they will have no right or claim to any of Lantheus Holdings' remaining assets.

Neither the par value nor the liquidation preference is indicative of the price at which the preferred stock will actually trade on or after the date of issuance.

Voting

The holders of preferred stock will be entitled to such voting rights as set forth in the applicable certificate of designations, as may be filed from time to time with the Secretary of State of the State of Delaware.

Antitakeover Provisions

The provisions of Delaware law, Lantheus Holdings' amended and restated certificate of incorporation and amended and restated bylaws, which are summarized below, may have antitakeover effects and could delay, defer or prevent a tender offer, takeover attempt or other change of control transaction that a stockholder might consider in its best interest.

Delaware Law Antitakeover Statute

Lantheus Holdings is governed by the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a public Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

- the board of directors approved the acquisition of stock pursuant to which the person became an interested stockholder or the transaction that resulted in the person becoming an interested stockholder prior to the time that the person became an interested stockholder;
- upon completion of the transaction that resulted in the person becoming an interested stockholder such person owned at least 85% of the outstanding voting stock of the corporation, excluding, for purposes of determining the voting stock outstanding, voting stock owned by directors who are also officers and certain employee stock plans; or

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- the transaction is approved by the board of directors and by the affirmative vote of two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

In general, Section 203 defines a “business combination” to include mergers, asset sales and other transactions resulting in financial benefit to a stockholder and an “interested stockholder” as a person who, together with affiliates and associates, owns, or within three years did own, 15% or more of the corporation’s outstanding voting stock. These provisions may have the effect of delaying, deferring or preventing changes in control of Lantheus Holdings.

Issuance of Undesignated Preferred Stock

The Lantheus Holdings Board has the authority, without stockholder approval, to issue up to 25,000,000 shares of undesignated preferred stock with rights and preferences, to the extent not fixed by certain provisions set forth in Lantheus Holdings’ certificate of incorporation, designated from time to time by the Lantheus Holdings Board. As of November 8, 2019, out of the 25,000,000 shares of authorized preferred stock, no shares have been designated. The existence of authorized but unissued shares of preferred stock would enable the Lantheus Holdings Board to render more difficult or to discourage an attempt to obtain control of Lantheus Holdings by means of a merger, tender offer, proxy contest or other means.

Certain Effects of Authorized but Unissued Stock

Lantheus Holdings may issue additional shares of common stock or preferred stock without stockholder approval, subject to applicable rules of the Nasdaq Global Market and Delaware law, for a variety of corporate purposes, including future public or private offerings to raise additional capital, corporate acquisitions, and employee benefit plans and equity grants. The existence of unissued and unreserved common and preferred stock may enable Lantheus Holdings to issue shares to persons who are friendly to current management, which could discourage an attempt to obtain control of Lantheus Holdings by means of a proxy contest, tender offer, merger or otherwise. Lantheus Holdings will not solicit approval of its stockholders for issuance of common and preferred stock unless the Lantheus Holdings Board believes that approval is advisable or is required by applicable rules of the Nasdaq Global Market or Delaware law.

No Cumulative Voting

Lantheus Holdings’ certificate of incorporation does not provide for cumulative voting.

Classified Board of Directors

Lantheus Holdings’ certificate of incorporation provides that the Lantheus Holdings Board is divided into three classes of directors serving staggered three-year terms. Each class, to the extent possible, will consist of one-third of the total number of directors constituting the entire Lantheus Holdings Board. Each class serves a term of three years, and the class of directors whose term expires will be elected at the annual meeting of Lantheus Holdings stockholders.

Size of Board of Directors and Vacancies

Lantheus Holdings’ certificate of incorporation provides that the total number of Lantheus Holdings directors will be fixed from time to time by a majority vote of the Lantheus Holdings Board. Lantheus Holdings’ certificate of incorporation further provides that, subject to the rights of holders of any series of preferred stock to elect directors under specific circumstances, any newly created directorships resulting from an increase in the authorized number of directors and any vacancies occurring in the Lantheus Holdings Board, shall be filled by an affirmative vote of a majority of the remaining directors then in office, even if less than a quorum, or by a sole remaining director. Any directors so elected shall hold office until the next annual meeting of stockholders and until their successors are elected and qualify.

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Amendment to Bylaws

Lantheus Holdings' certificate of incorporation provides that the bylaws may be altered, amended or repealed or new bylaws may be made by the affirmative vote of the holders of record of a majority of the shares of Lantheus Holdings entitled to vote, at any annual or special meeting, or, by a vote of the majority of the Lantheus Holdings Board, at any regular or special meeting at which a quorum is present.

Special Stockholder Meetings; Notice Requirements

Lantheus Holdings' bylaws provide that, subject to the terms of any one or more series or classes of preferred stock, a special meeting of stockholders may be called (1) by or at the direction of a majority of the directors then in office, the chairperson of the Lantheus Holdings Board or by the chief executive officer of Lantheus Holdings and (2) by holders of a majority of the then outstanding shares of Lantheus Holdings common stock who have complied with the requirements in Lantheus Holdings' bylaws. Lantheus Holdings' bylaws provide advance notice procedures for stockholders seeking to bring business before its annual meeting of stockholders or to nominate candidates for election as directors at its annual meeting of stockholders.

Lantheus Holdings' bylaws also specify certain requirements regarding the form and content of a stockholder's notice. In the case of an annual meeting, a stockholder must give notice not less than 90 days nor more than 120 days prior to the anniversary of the immediately preceding annual meeting; provided, however, that in the event that the date of the meeting is not within 30 days before or more than 60 days after such anniversary date, notice by the stockholder must be received no earlier than 120 days and no later than 90 days prior to such meeting, or, if the first public announcement of the date of such meeting is less than 100 days prior to the date of such meeting, then no later than the 10th day following the day on which public announcement of the date of the annual meeting was first made by Lantheus Holdings. The notice must include a description of the proposal, the reasons for the proposal, and other specified matters. The Lantheus Holdings Board may reject any proposals that have not followed these procedures.

Limitation on Liability of Directors; Indemnification

Lantheus Holdings' certificate of incorporation provides that no director shall be personally liable to Lantheus Holdings or any of its stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent such exemption from liability or limitation thereof is not permitted under the DGCL as the same exists or may hereafter be amended. If the DGCL is amended to authorize the further elimination or limitation of the liability of directors, then the liability of Lantheus Holdings' directors shall be eliminated or limited to the fullest extent authorized by the DGCL, as so amended. Lantheus Holdings' certificate of incorporation further provides that any alteration, amendment, addition to or repeal of, or adoption of any provision inconsistent with, this limitation of liability by the Lantheus Holdings stockholders shall not adversely affect any right or protection of a director of Lantheus Holdings existing at the time of such alteration, amendment, addition to, repeal or adoption with respect to acts or omissions occurring prior to such alteration, amendment, addition to, repeal or adoption.

Lantheus Holdings' certificate of incorporation and bylaws requires that Lantheus Holdings indemnify and hold harmless any current or former director and officer to the fullest extent permitted by law. The right to indemnification includes the right to be paid the expenses incurred in connection with any proceeding in advance of its final disposition. Any alteration, amendment, addition or repeal by the stockholders of indemnification or advancement rights shall not adversely affect any rights to indemnification and to the advancement of expenses of a director or officer of Lantheus Holdings existing at the time of such alteration, amendment, addition or repeal with respect to any acts or omissions occurring prior to such alteration, amendment, addition or repeal.

The Lantheus Holdings Board may in its discretion provide rights to indemnification and to the advancement of expenses to employees and agents of Lantheus Holdings similar to those described above.

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The inclusion of these provisions in the Lantheus Holdings' certificate of incorporation may have the effect of reducing the likelihood of derivative litigation against Lantheus Holdings' directors and may discourage or deter Lantheus Holdings or its stockholders from bringing a lawsuit against Lantheus Holdings' directors for breach of their duty of care, even though such an action, if successful, might otherwise have benefited Lantheus Holdings and its stockholders.

STOCK OWNERSHIP OF AND VOTING BY LANTHEUS HOLDINGS DIRECTORS AND EXECUTIVE OFFICERS AND CERTAIN STOCKHOLDERS

The following table sets forth, as of November 8, 2019 (except as otherwise noted), beneficial ownership of shares of Lantheus Holdings common stock by each director, each of the named executive officers and all directors and executive officers as a group, and all persons known by the Lantheus Holdings Board to be beneficial owners of more than five percent of the outstanding shares of Lantheus Holdings common stock. Shares are beneficially owned when an individual has voting and/or investment power over the shares or could obtain voting and/or investment power over the shares within 60 days. Voting power includes the power to direct the voting of the shares and investment power includes the power to direct the disposition of the shares. Unless otherwise noted, shares listed below are owned directly or indirectly with sole voting and investment power. There are no beneficial owners of more than 5% of the outstanding shares of Lantheus Holdings' preferred stock.

<u>Name of Beneficial Owner</u>	<u>Number of Shares of Common Stock Beneficially Owned(1)</u>	<u>Percentage Ownership</u>
Directors and Named Executive Officers		
Brian Markison(2)	81,109	*
James Clemmer(2)	55,627	*
Samuel Leno(2)	78,098	*
Julie McHugh(2)	12,157	*
Dr. Frederick Robertson(2)	37,709	*
Dr. Derace Schaffer(2)	11,641	*
Dr. James Thrall(2)	4,411	*
Gary Pruden(2)	4,719	*
Kenneth Pucel(2)	7,911	*
Mary Anne Heino(3)	284,177	*
Michael Duffy(4)	77,993	*
Cesare Orlandi(5)	—	*
Robert J. Marshall Jr.(6)	6,351	*
John Bolla(7)	3,286	*
All Directors and Named Executive Officers as a Group (14 persons)(8)	665,189	1.7%
5% Stockholders		
BlackRock, Inc.(9)	5,540,296	14.1%
Wellington Management Co. LLP(10)	2,674,989	6.8%
The Vanguard Group(11)	2,362,948	6.0%

* Represents beneficial ownership of less than 1% of all shares of Lantheus Holdings common stock.

- (1) Shares subject to restricted stock awards that are currently vested or that will vest within 60 days of the date of this joint proxy statement/prospectus, and stock options currently exercisable or exercisable within 60 days of the date of joint proxy statement/prospectus, are deemed to be outstanding and beneficially owned by the person holding those restricted stock awards and options for the purposes of computing the percentage of beneficial ownership of that person and any group of which that person is a member, but are not deemed outstanding for the purpose of computing the percentage of beneficial ownership for any other person.
- (2) Does not include 5,353 unvested restricted stock units held by each director.
- (3) Does not include 342,601 unvested restricted stock awards, restricted stock units and performance-based vesting stock awards held by Ms. Heino.
- (4) Does not include 78,308 unvested restricted stock awards, restricted stock units and performance-based vesting stock awards held by Mr. Duffy.
- (5) Based on shares held by Mr. Orlandi upon separation with Lantheus Holdings on October 2, 2019.

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- (6) Does not include 53,428 unvested restricted stock awards, restricted stock units and performance-based vesting stock awards held by Mr. Marshall.
- (7) Does not include 33,119 unvested restricted stock awards, restricted stock units and performance-based vesting stock awards held by Mr. Bolla.
- (8) Does not include 555,633 unvested restricted stock awards, restricted stock units and performance-based vesting stock awards held by Lantheus Holdings' directors and named executive officers as a group. Each of Lantheus Holdings' directors and executive officers is expected, as of the date of this joint proxy statement/prospectus, to vote his or her shares of Lantheus Holdings common stock "FOR" the stock issuance proposal and "FOR" the Lantheus Holdings adjournment proposal, although none of Lantheus Holdings' directors and executive officers has entered into any agreement requiring them to do so.
- (9) Based solely on Amendment No. 1 to Schedule 13G filed on January 31, 2019 by Blackrock, Inc. In that filing, Blackrock, Inc. reports sole voting power with respect to 5,464,971 shares of Lantheus Holdings common stock and sole dispositive power with respect to 5,540,296 shares of Lantheus Holdings common stock, and reports that not more than 5% of shares of Lantheus Holdings common stock is owned by any one client subject to the investment advice of Blackrock, Inc. Also in that filing, Blackrock, Inc. lists its address as 55 E. 52nd Street, New York, New York 10055.
- (10) Based solely on Amendment No. 3 to Schedule 13G filed on February 12, 2019 by Wellington Management Group LLP, Wellington Group Holdings LLP, Wellington Investment Advisors Holdings LLP and Wellington Management Company LLP (collectively, "Wellington"). In that filing, (i) Wellington Management Group LLP, Wellington Group Holdings LLP and Wellington Investment Advisors Holdings LLP each report shared voting power with respect to 2,674,989 shares of Lantheus Holdings common stock and shared dispositive power with respect to 2,674,989 shares of Lantheus Holdings common stock and (ii) Wellington Management Company LLP reports shared voting power with respect to 2,616,506 shares of Lantheus Holdings common stock and shared dispositive power with respect to 2,616,506 shares of Lantheus Holdings common stock. In that filing, Wellington also reports that (a) all of these shares of Lantheus Holdings common stock are owned of record by clients of one or more of the following of its investment advisors: Wellington Management Company LLP, Wellington Management Canada LLC, Wellington Management Singapore Pte Ltd, Wellington Management Hong Kong Ltd, Wellington Management International Ltd, Wellington Management Japan Pte Ltd and Wellington Management Australia Pty Ltd (collectively, the "Wellington Investment Advisers"), (b) none of those clients owns more than 5% of shares of Lantheus Holdings common stock, except for Wellington Trust Company, NA, (c) Wellington Management Group LLP is the parent holding company of certain holding companies and the Wellington Investment Advisers, (d) Wellington Investment Advisors Holdings LLP controls directly, or indirectly through Wellington Management Global Holdings, Ltd., the Wellington Investment Advisers, (e) Wellington Investment Advisors Holdings LLP is owned by Wellington Group Holdings LLP and (f) Wellington Group Holdings LLP is owned by Wellington Management Group LLP. Also in that filing, Wellington lists its address as c/o Wellington Management Company LLP, 280 Congress Street, Boston, MA 02210.
- (11) Based solely on a Schedule 13G filed on February 12, 2019 by The Vanguard Group. In that filing, The Vanguard Group reports sole voting power with respect to 75,084 shares of Lantheus Holdings common stock, shared voting power with respect to 2,200 shares of Lantheus Holdings common stock, shared dispositive power with respect to 72,236 shares of Lantheus Holdings common stock and sole dispositive power with respect to 2,290,712 shares of Lantheus Holdings common stock, and reports that not more than 5% of shares of Lantheus Holdings common stock is owned by any one client subject to the investment advice of The Vanguard Group. Also in that filing, The Vanguard Group lists its address as The Vanguard Group, 100 Vanguard Blvd., Malvern, PA 19355.

STOCK OWNERSHIP OF AND VOTING BY PROGENICS DIRECTORS AND EXECUTIVE OFFICERS AND CERTAIN STOCKHOLDERS

The following table sets forth certain information as of November 8, 2019, except as noted, regarding the beneficial ownership of Progenics common stock by (i) each person or group known to Progenics to be the beneficial owner of more than 5% of Progenics common stock outstanding, (ii) each of Progenics' directors and named executive officers, and (iii) all of Progenics' directors and executive officers as a group.

<u>Name and Address of Beneficial Owner(1)</u>	<u>Shares Beneficially Owned(2)</u>	
	<u>Number</u>	<u>Percent</u>
BlackRock, Inc. and affiliates(3) 55 East 52nd Street New York, NY 10055	13,530,763	15.66%
Altiva Management Inc. and affiliates(4) 1055b Powers Place Alpharetta, GA 30009	10,161,733	11.76%
Armistice Capital, LLC and affiliates(5) 510 Madison Avenue, 7th floor New York, NY 10022	5,700,000	6.60%
State Street Corporation and affiliates (6) One Lincoln Street Boston MA 02111	5,151,528	5.96%
Point72 Asset Management, L.P. and affiliates(7) 72 Cummins Point Road Stamford. CT06902	4,775,000	5.53%
Farallon Capital Management LLC and affiliates(8) One Maritime Plaza Suite 2100 San Francisco, CA 94111	4,675,567	5.41%
Eagle Asst Management(9) 880 Carillon Parkway St. Petersburg, FL 33716	4,495,365	5.20%
Mark R. Baker(10)	1,554,930	1.80%
Bradley L. Campbell(11)	79,415	*
Karen J. Ferrante(12)	155,415	*
David A. Scheinberg(13)	221,597	*
Nicole S. Williams(14)	170,415	*
Patrick Fabbio(15)	269,125	*
Benedict Osorio(16)	41,202	*
Bryce Tenbarga(17)	114,300	*
Vivien Wong(18)	546,046	*
All directors and executive officers as a group(19)	3,152,445	3.65%

* Less than one percent.

(1) The address of each beneficial owner who is a director or officer of Progenics is in care of Progenics.

(2) With respect to Progenics' directors and executive officers, and except as indicated and/or pursuant to applicable community property laws, each stockholder possesses sole voting and investment power with respect to the shares of Progenics common stock listed. The number of shares of Progenics common stock

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beneficially owned includes shares issuable pursuant to stock options held by the stockholder that are currently exercisable (*i.e.*, within 60 days of November 8, 2019). Shares issuable upon exercise of these options are deemed outstanding for computing the percentage of beneficial ownership of the person holding the options but not of any other person. None of the shares held by Progenics' directors and executive officers are pledged as collateral.

With respect to other stockholders identified above, the percent reported is calculated by dividing (i) the number of shares reported by the stockholder in the Schedule 13G or Schedule 13D filing described in the related note by (ii) the aggregate number of Progenics common shares outstanding on November 8, 2019, and differs from the Percent of Class reported in the stockholder's Schedule 13G or Schedule 13D; it assumes that the stockholder continued to own the number shares reported in its Schedule 13G or Schedule 13D on November 8, 2019.

- (3) Based on a Schedule 13G (Amendment No. 6) filed on January 31, 2019, BlackRock (Netherlands) B.V., BlackRock Advisors, LLC, BlackRock Asset Management Canada Limited, BlackRock Asset Management Ireland Limited, BlackRock Asset Management Schweiz AG, BlackRock Financial Management, Inc., BlackRock Fund Advisors, BlackRock Institutional Trust Company, N.A. and BlackRock Investment Management, LLC acquired the securities reported. According to the Schedule 13G, BlackRock, Inc., in its capacity as a parent-holding company of the foregoing BlackRock funds, has sole voting power over 13,069,292 shares of Progenics common stock and sole dispositive power over 13,530,763 shares of Progenics common stock.
- (4) Based on a Schedule 13D (Amendment No. 3) filed on September 19, 2019, Altiva Management Inc., Velan Capital, L.P., Balaji Venkataraman, Dr. Virinder Nohria, LTE Partners, LLC, LTE Management, LLC, Melkonian Capital Management, LLC and Ryan Melkonian acquired the securities reported. According to the Schedule 13D, Velan Capital, L.P., Altiva Management Inc., as general partner of Velan Capital, L.P., and Balaji Venkataraman, as the sole stockholder of Altiva Management Inc., have sole voting and dispositive power over 8,011,733 shares of Progenics common stock, Dr. Virinder Nohria has sole voting and dispositive power over 110,000 shares of Progenics common stock, LTE Partners, LLC, LTE Management, LLC, Melkonian Capital Management, LLC and Ryan Melkonian have sole voting and dispositive power over 1,950,000 shares of Progenics common stock, Terence Cooke has sole voting and dispositive power over 40,000 shares of Progenics common stock, and Gérard Ber has sole voting and dispositive power over 50,000 shares of Progenics common stock.
- (5) Based on a Schedule 13G (Amendment No. 1) filed on February 14, 2019, Armistice Capital, LLC, Armistice Capital Master Fund Ltd. and Steven Boyd acquired the securities reported. According to the Schedule 13G, Armistice Capital, LLC, Armistice Capital Master Fund Ltd. and Steven Boyd share voting and dispositive power over the 5,700,000 shares of Progenics common stock.
- (6) Based on a Schedule 13G filed on February 14, 2019, SSGA Funds Management, Inc., State Street Global Advisors Limited (UK) and State Street Global Advisors Trust Company acquired the securities reported. According to the Schedule 13G, State Street Corporation, in its capacity as a parent-holding company of the foregoing State Street funds, shares voting power over 4,872,495 shares of Progenics common stock and shares dispositive power over the 5,151,528 shares of Progenics common stock.
- (7) Based on a Schedule 13G filed on January 2, 2019, Point72 Asset Management, L.P., Point72 Capital Advisors, Inc., Cubist Systematic Strategies, LLC and Steven A. Cohen acquired the securities reported. According to the Schedule 13G, Point72 Asset Management, L.P. and Point72 Capital Advisors, Inc. share voting and dispositive power over the 4,775,000 shares of Progenics common stock, Cubist Systematic Strategies, LLC shares voting and dispositive power over 6,895 shares of Progenics common stock, and Steven A. Cohen shares voting and dispositive power over 4,781,895 shares of Progenics common stock.
- (8) Based on a Schedule 13G filed on June 24, 2019, Farallon Capital Management LLC and affiliates acquired the securities reported. According to the Schedule 13G, Farallon Capital Management LLC and affiliates have shared voting and dispositive power over the 4,675,567 shares of Progenics common stock.
- (9) Based on a Schedule 13G (Amendment No. 3) filed on January 16, 2019, Eagle Asset Management, Inc. acquired the securities reported. According to the Schedule 13G, Eagle Asset Management, Inc. has sole voting and dispositive power over the 4,495,365 shares of Progenics common stock.

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- (10) Includes 161,140 shares outstanding and 1,393,790 issuable upon exercise of currently exercisable options. On November 11, 2019, Mr. Baker tendered his resignation as a member of the Progenics Board and as the Chief Executive Officer of Progenics effective immediately.
- (11) Includes 12,000 shares outstanding and 65,332 shares issuable upon exercise of currently exercisable options.
- (12) Includes 50,000 shares outstanding and 428,332 shares issuable upon exercise of currently exercisable options.
- (13) Consists of 153,332 shares issuable upon exercise of currently exercisable options.
- (14) Consists of 168,674 shares issuable upon exercise of currently exercisable options.
- (15) Includes 56,182 shares outstanding and 163,332 issuable upon exercise of currently exercisable options.
- (16) Includes 5,000 shares outstanding and 163,332 issuable upon exercise of currently exercisable options.
- (17) Includes 244,125 shares issuable upon exercise of currently exercisable options.
- (18) Includes 21,202 shares outstanding and 20,000 issuable upon exercise of currently exercisable options.
- (19) Includes 114,300 shares issuable upon exercise of currently exercisable options.
- (20) Includes 4,121 shares outstanding and 541,925 issuable upon exercise of currently exercisable options.
- (21) Includes 309,645 shares outstanding and 3,456,474 issuable upon exercise of currently exercisable options held by directors, named executive officers, and other executive officers of Progenics.

COMPARISON OF STOCKHOLDER RIGHTS

The rights of Lantheus Holdings stockholders are currently governed by Delaware law and Lantheus Holdings' certificate of incorporation and bylaws. The rights of Progenics stockholders are currently governed by Delaware law and Progenics' certificate of incorporation and by-laws. Following completion of the merger, the rights of Progenics stockholders who become stockholders of Lantheus Holdings in the merger will be governed by Delaware law and Lantheus Holdings' certificate of incorporation and Lantheus Holdings' bylaws.

The following discussion summarizes the material differences between the current rights of Progenics stockholders and the current rights of Lantheus Holdings stockholders. These differences arise from the governing instruments of the two companies.

Although it is impracticable to compare all of the aspects in which Lantheus Holdings' and Progenics' governing instruments differ with respect to stockholder rights, the following discussion summarizes certain material differences between them. This summary is not intended to be complete, and it is qualified in its entirety by reference to Lantheus Holdings' certificate of incorporation and bylaws and Progenics' certificate of incorporation and by-laws. In addition, the identification of some of the differences in the rights of these stockholders as material is not intended to indicate that other differences that are equally important do not exist. Lantheus Holdings and Progenics urge you to carefully read this entire joint proxy statement/prospectus and the other documents to which Lantheus Holdings and Progenics refer in this joint proxy statement/prospectus for a more complete understanding of the differences between the rights of a Lantheus Holdings stockholder and the rights of a Progenics stockholder. Lantheus Holdings and Progenics have filed with the SEC their respective governing documents referenced in this comparison of stockholder rights and will send copies of these documents to you, without charge, upon your written or telephonic request. See "Where You Can Find More Information" beginning on page 222 of this joint proxy statement/prospectus.

Material Differences in Stockholder Rights

	<u>Lantheus Holdings Stockholder Rights</u>	<u>Progenics Stockholder Rights</u>
Authorized Capital Stock	<p>As of November 8, 2019, the authorized capital stock of Lantheus Holdings consists of (i) 250,000,000 shares of common stock, par value \$0.01 per share, and (ii) 25,000,000 shares of preferred stock, par value \$0.01 per share.</p> <p>The Lantheus Holdings Board is authorized, without stockholder approval, to issue shares of preferred stock from time to time in one or more series and to fix and state, to the extent not fixed by the certain provisions set forth in Lantheus Holdings' certificate of incorporation and subject to limitations prescribed by Delaware law, the voting powers, designations, preferences and relative, participating, optional and other special rights of the shares of each such series and the qualifications, limitations and restrictions thereof.</p>	<p>As of November 8, 2019, the authorized capital stock of Progenics consists of (i) 160,000,000 shares of common stock, par value \$0.0013 per share, and (ii) 20,000,000 shares of preferred stock, par value \$0.001 per share.</p> <p>The Progenics Board is authorized, without stockholder approval, to issue shares of authorized preferred stock from time to time in one or more series and to fix, to the extent permitted by Delaware law, the designations, powers, preferences and rights and the qualifications, limitations and restrictions of each series of preferred stock.</p> <p>As of November 8, 2019, there were outstanding (i) 86,421,634 shares of Progenics common stock and (ii) no shares of Progenics preferred stock.</p>

Lantheus Holdings Stockholder Rights

Progenics Stockholder Rights

As of November 8, 2019, there were outstanding (i) 39,248,092 shares of Lantheus Holdings common stock and (ii) no shares of Lantheus Holdings preferred stock.

Number of Directors

The Lantheus Holdings Board currently has 10 members.

The Progenics Board currently has 7 members.

Lantheus Holdings' bylaws currently provide that the number of directors constituting the whole board of directors is fixed by a majority vote of the board of directors.

Progenics' by-laws currently provide that the number of members of the Progenics Board shall be fixed at each annual meeting of stockholders.

Lantheus Holdings has a classified board of directors. Lantheus Holdings' certificate of incorporation provides that the directors shall be divided into three classes consisting of, as nearly as may be possible, one-third of the total number of directors constituting the entire Lantheus Holdings Board. Each class of directors will serve a term of three years, and the class of directors whose term expires will be elected at the annual meeting of Lantheus Holdings stockholders for the election of directors at which a quorum is present and shall serve until the third succeeding annual meeting of stockholders and until their respective successors have been elected and qualified.

Delaware law permits classified boards of directors. Progenics' by-laws and certificate of incorporation do not provide for a classified board of directors.

Election of Directors

Lantheus Holdings' bylaws provide for a plurality of votes standard for elections of directors. Under Lantheus Holdings' bylaws, at any meeting of stockholders at which directors are to be elected, directors shall be elected by the plurality vote of the votes cast by the holders of shares present in person or represented by proxy at the meeting and entitled to vote thereon. Furthermore, on October 18, 2018, upon the recommendation of the Nominating and Corporate Governance Committee of Lantheus Holdings, the Lantheus Holdings Board adopted a majority voting policy, providing that in the case of an uncontested election of directors in

Under Delaware law, directors are elected annually. Progenics' by-laws provide that, at any meeting duly called and held for the election of directors at which a quorum is present, each nominee for director shall be elected to the board of directors if the votes cast for such nominee's election exceed the votes cast against such nominee's election; provided, however, that if, as of fourteen days in advance of the date Progenics files its definitive proxy statement with the SEC, the number of nominees exceeds the number of directors to be elected, the directors shall be elected by the vote of a plurality of the shares represented in person or by proxy at any

	<u>Lantheus Holdings Stockholder Rights</u>	<u>Progenics Stockholder Rights</u>
	<p>which a director nominee does not receive votes affirmatively cast “FOR” his or her election or re-election in excess of 50% of the number of votes cast with respect to that nominee’s election or re-election, that director will contingently tender his or her resignation, which, in accordance with the majority voting policy, the Lantheus Holdings Board may in its sole discretion elect to accept. The majority voting policy will take effect beginning with the election of Lantheus Holdings Class II directors at its annual stockholders meeting in 2020.</p>	<p>such meeting and entitled to vote on the election of directors.</p>
Removal of Directors	<p>Under Lantheus Holdings’ bylaws, directors may be removed, but only for cause, by the affirmative vote of the holders of a majority of the shares of stock outstanding and entitled to vote at an election of directors. As defined in Lantheus Holdings’ bylaws, “cause” means, with respect to any director, (i) the willful failure by such director to perform, or the gross negligence of such director in performing, the duties of a director, (ii) the engaging by such director in willful or serious misconduct that is injurious to Lantheus Holdings or (iii) the conviction of such director of, or the entering by such director of a plea of nolo contendere to, a crime that constitutes a felony.</p>	<p>Under Progenics’ by-laws, any director or the entire board of directors may be removed, with or without cause, by the affirmative vote of the holders of a majority of the shares of stock outstanding and entitled to vote at an election of directors.</p>
Voting	<p>Each holder of Lantheus Holdings common stock is entitled to one vote per share of Lantheus Holdings common stock.</p>	<p>Each holder of Progenics common stock is entitled to one vote per share of Progenics common stock.</p>
Cumulative Voting	<p>Under Delaware law, Lantheus Holdings stockholders are not entitled to cumulative voting unless it is expressly provided for in the certificate of incorporation. Lantheus Holdings’ certificate of incorporation does not provide for cumulative voting.</p>	<p>Under Delaware law, Progenics stockholders are not entitled to cumulative voting unless it is expressly provided for in the certificate of incorporation. Progenics’ certificate of incorporation does not provide for cumulative voting.</p>
Vacancies on the Board of Directors	<p>Under Delaware law and Lantheus Holdings’ bylaws, vacancies in the Lantheus Holdings Board, from any cause whatsoever, including vacancies</p>	<p>Progenics’ by-laws provide that any vacancies on the board of directors, or additional directorships resulting from an increase in the number of directors, may</p>

Lantheus Holdings Stockholder Rights

Progenics Stockholder Rights

created by an increase in the number of directors, shall be filled by an affirmative vote of a majority of the remaining directors, even if less than a quorum.

be filled at any time by a majority of directors then in office, even though less than a quorum remains, or by the stockholders at any meeting. Any director so chosen shall hold office until his successor shall have been elected and qualified; or, if the person so chosen is a director elected to fill a vacancy, he shall hold office for the unexpired term of his predecessor.

Special Meeting of the Board of Directors

A special meeting of the Lantheus Holdings Board may be called by direction of the chairperson of the board of directors, the chief executive officer, the president, or pursuant to a resolution approved by a majority of the board of directors then in office.

Progenics' by-laws provide that special meetings of the Progenics Board may be called by the chairman or any co-chairman of the board, the chief executive officer, or any two of the directors then in office.

Stockholder Action by Written Consent

Under Lantheus Holdings' certificate of incorporation and bylaws, any action required or permitted to be taken by the stockholders of the corporation must be effected at a duly called annual or special meeting of such stockholders and may not be effected by any consent in writing by such stockholders.

Progenics' by-laws provide that any action required by statute to be taken at any annual or special meeting of the stockholders, or any action which may be taken at any annual or special meeting of the stockholders, may be taken by written consent if the written consent is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted.

Amendment to Certificate of Incorporation

Under Delaware law, an amendment to Lantheus Holdings' certificate of incorporation requires (i) a resolution of the Lantheus Holdings Board recommending that the amendment be approved by stockholders, (ii) the approval of a majority of the outstanding stock entitled to vote upon the proposed amendment and (iii) the approval of the holders of a majority of the outstanding stock of each class entitled to vote thereon as a class, if any. Under Lantheus Holdings' certificate of incorporation, Lantheus Holdings reserves the right to amend its certificate of incorporation in any manner permitted by Delaware law and, with the sole exception of the rights and powers conferred under the provision

Under Delaware law, an amendment to Progenics' certificate of incorporation requires (i) a resolution of the Progenics Board recommending that the amendment be approved by stockholders, (ii) the approval of a majority of the outstanding stock entitled to vote upon the proposed amendment and (iii) the approval of the holders of a majority of the outstanding stock of each class entitled to vote thereon as a class, if any. Under Progenics' certificate of incorporation, Progenics reserves the right to amend its certificate of incorporation in any manner permitted by Delaware law and, with the sole exception of the rights and powers conferred under the provision of the

Lantheus Holdings Stockholder Rights

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of the certificate of incorporation with respect to liability of directors for breaches of fiduciary duties, all rights and powers conferred therein on Lantheus Holdings stockholders, if any, are subject to such reserved power.

certificate of incorporation with respect to liability of directors for breaches of fiduciary duties, all rights and powers conferred therein on Progenics stockholders, if any, are subject to such reserved power.

Amendment of Bylaws

Lantheus Holdings' certificate of incorporation and bylaws provide that the bylaws may be altered, amended, added to or repealed by the affirmative vote of the holders of at least a majority of the voting power of Lantheus Holdings' then outstanding shares entitled to vote generally in the election of directors, voting together as a single class, or by a majority of the directors then in office.

Progenics' certificate of incorporation and by-laws provide that Progenics' by-laws may be altered, amended, changed or repealed and new by-laws adopted by the stockholders or by the board of directors, in either case at any meeting called for that purpose at which a quorum shall be present, except that such provision in the by-laws regarding how the by-laws may be so amended may only be altered, amended, changed or repealed by a vote of the stockholders.

Special Stockholder Meetings

Lantheus Holdings' bylaws provide that special meetings of the stockholders may be called, for any purpose or purposes, by the chairperson of the board of directors, the chief executive officer, or by a majority of the board of directors at any time.

Progenics' by-laws provide that special meetings of the stockholders may be called, for any purpose or purposes, by the chairman or any co-chairman of the board of directors or by the directors, either by written instrument signed by a majority or by resolution adopted by a vote of the majority.

In addition, holders of a majority of the then outstanding shares of common stock of Lantheus Holdings may call a special meeting of the stockholders.

In addition, a special meeting of stockholders may be called by secretary upon the written request to the secretary of one or more record holders of shares of Progenics stock representing in the aggregate at least 20% of the outstanding shares of common stock of Progenics entitled to vote who have held such shares continuously for at least one year prior to the date such request was delivered to the secretary, which is referred to in this joint proxy statement/prospectus as the Requisite Percent, which shares are reasonably determined by the board of directors to be Net Long Shares. "Net Long Shares" are defined in Progenics' by-laws to mean shares of common stock as to which the stockholder(s) of record making the special meeting request or beneficial owner(s), if any, on whose behalf the special meeting request is being made

Any such special meetings of the stockholders shall be held at such places, within or without the State of Delaware, or, within the sole discretion of the board of directors, and subject to such guidelines and procedures as the board of directors may adopt, by means of remote communication, as shall be specified in the respective notices or waivers of notice thereof.

An eligible stockholder may bring any item of business before a special meeting of the stockholders provided that the advance notice requirements as set out in Lantheus Holdings' bylaws (and provided below) are observed. An eligible stockholder is any stockholder of

Lantheus Holdings Stockholder Rights

record that holds stock of Lantheus Holdings entitled to vote at the meeting on the business to be appropriately conducted at the meeting or a stockholder that holds such stock through a nominee or "street name" holder of record and can demonstrate to Lantheus Holdings such indirect ownership of such stock and such holder's entitlement to vote such stock on such business.

To be in proper form, an eligible stockholder must deliver advance notice to the secretary at the principal executive offices of Lantheus Holdings of the items of business proposed to be brought before the special meeting of stockholders. Such notice must set forth as to the eligible stockholder and, if the eligible stockholder holds for the benefit of another, the beneficial owner on whose behalf any nomination or proposal is made, the following information together with a representation as to the accuracy of the information: (i) a brief description of each matter of business desired to be brought before the special meeting and the reasons for conducting such business at the special meeting (including the text of any resolutions to be proposed for consideration by stockholders) and/or, the information required by a stockholder nomination of persons for election as directors, as applicable; (ii) the name and address of the eligible stockholder as they appear on Lantheus Holdings' books and, if the eligible stockholder holds for the benefit of another, the name and address of such beneficial owner; (iii) the class or series and number of shares of Lantheus Holdings that are, directly or indirectly, owned beneficially and/or of record, and the date such ownership was acquired; (iv) any option, warrant, convertible security, stock appreciation right, or similar right with an exercise or conversion privilege or a settlement payment or mechanism at a price related to any class or series of shares of Lantheus Holdings or with a value derived in whole or in part from the value

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possess(es) both (i) the full voting and investment rights pertaining to the shares and (ii) the full economic interest in such shares. Net Long Shares exclude any shares (a) sold by such stockholder in any transaction that has not been settled or closed, (b) borrowed by such stockholder for any purposes or purchased by such stockholder pursuant to an agreement to resell, or (c) subject to any option, warrant, forward contract, swap, contract of sale, other derivative or similar instrument, agreement of arrangement entered into by such stockholder or any of its affiliates, whether any such instrument, agreement or arrangement is to be settled with shares or with cash based on the notional amount or value of shares of outstanding common stock of Progenics, in any such case which instrument, agreement or arrangement has, or is intended to have, or if exercised by either party would have, the purpose or effect of (1) reducing in any manner, to any extent or at any time in the future, such stockholder's or its affiliates' full right to vote or direct the voting of any such shares, and/or (2) hedging, offsetting or altering to any degree any gain or loss realized or realizable from maintaining the full economic ownership of such shares by such stockholder or its affiliates.

In order for a stockholder requested special meeting to be called, one or more requests for a special meeting must be signed by the Requisite Percent of record holders who have held such shares continuously for the one-year period by each of the beneficial owners, if any, on whose behalf the special meeting request is being made and delivered to the secretary, at the principal executive offices of Progenics.

To be in proper form, such special meeting request must set forth: (i) a brief description of each matter of business desired to be brought before the special meeting and the reasons for conducting

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of any class or series of shares of Lantheus Holdings, whether or not the instrument or right shall be subject to settlement in the underlying class or series of capital stock of Lantheus Holdings or otherwise that is directly or indirectly owned beneficially by the eligible person or beneficial owner or any stockholder associate person of the eligible stockholder and any other direct or indirect opportunity to profit or share in any profit derived from any increase or decrease in the value of shares of Lantheus Holdings; (v) any proxy, contract, arrangement, understanding or relationship pursuant to which the eligible stockholder or any beneficial owner has a right to vote or has granted a right to vote any shares of any security of Lantheus Holdings; (vi) any short interest in any security of Lantheus Holdings; (vii) any rights to dividends on the shares of Lantheus Holdings owned beneficially by the eligible stockholder or any beneficial owner that are separated or separable from the underlying shares of Lantheus Holdings; (viii) any proportionate interest in shares of Lantheus Holdings or derivative instruments held, directly or indirectly, by a general or limited partnership or limited liability company or similar entity in which the eligible stockholder or any beneficial owner or any stockholder associated person of the eligible stockholder is a general partner or, directly or indirectly, beneficially owns an interest in a general partner, is the manager, managing member or directly or indirectly beneficially owns an interest in the manager or managing member of a limited liability company or similar entity; (ix) any performance-related fees (other than an asset-based fee) that the eligible stockholder or any beneficial owner or any stockholder associated person of the eligible stockholder is entitled to based on any increase or decrease in the value of shares of Lantheus Holdings or derivative instruments, if any; (x) any arrangements,

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such business at the special meeting (including the text of any resolutions to be proposed for consideration by stockholders) and/or, the information required by a stockholder nomination of persons for election as directors, as applicable; (ii) documentary evidence of the number of Net Long Shares owned by the requesting stockholder(s) as of the date on which the special meeting request is delivered to the secretary and documentary evidence that such shares have been held continuously for the one-year period, provided that, if the stockholder submitting the special meeting request is not the beneficial owner of such shares, then to be valid, the special meeting request must also include documentary evidence (or, if not simultaneously provided with the special meeting request, such documentary evidence must be delivered to the secretary within 10 days after the date on which the special meeting request is delivered to the secretary) of the number of Net Long Shares owned by the beneficial owner(s) as of the date on which the special meeting request is delivered to the secretary and documentary evidence that such shares have been held for the one-year period; (iii) an acknowledgment of the requesting stockholder(s) that any decrease after the date on which the special meeting request is delivered to the secretary in the number of Net Long Shares held by such stockholder shall be deemed a revocation of the special meeting request with respect to such shares and that such shares will no longer be included in determining whether the Requisite Percentage has been satisfied; and (iv) a commitment by the requesting stockholder(s) to continue to satisfy the Requisite Percentage through the date of the stockholder requested special meeting and to promptly notify Progenics upon any decrease occurring between the date on which the special meeting request is delivered to the secretary and the date of the stockholder requested special meeting

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rights, or other interests required to be provided as set forth above that are held by members of such eligible stockholder's or any beneficial owner's immediate family sharing the same household; (xi) a representation that the eligible stockholder intends to appear in person or by proxy at the meeting to nominate the person(s) named or propose the business specified in the notice and whether or not such stockholder intends to deliver a proxy statement and/or form of proxy to holders of at least the percentage of Lantheus Holdings' outstanding shares required to approve the nomination(s) or the business proposed and/or otherwise to solicit proxies from stockholders in support of the nomination(s) or the business proposed; (xii) a certification regarding whether or not such stockholder and stockholder associated persons have complied with all applicable federal, state and other legal requirements in connection with such stockholder's and/or stockholder associated persons' acquisition of shares or other securities of Lantheus Holdings and/or such stockholder's and/or stockholder associated persons' acts or omissions as a stockholder of Lantheus Holdings; (xiii) any other information relating to the eligible stockholder or any beneficial owner that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for, as applicable, the proposal and/or for the election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations thereunder; and (xiv) any other information as reasonably requested by Lantheus Holdings.

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in the number of Net Long Shares owned by such stockholder.

A special meeting of stockholders may be held at such date, time and place, if any, within or without the State of Delaware as may be designated by the board of directors; provided, however, that the date of any stockholder requested special meeting shall be not more than 90 days after a special meeting request satisfying the requirements set forth in Progenics' by-laws and representing the Requisite Percentage is received by the secretary. In fixing a date, time and place, if any, for any special meeting of stockholders, the board of directors may consider such factors as it deems relevant, including without limitation, the nature of the matters to be considered, the facts and circumstances related to any request for a meeting and any plan of the board of directors to call an annual meeting or special meeting. Progenics may postpone, reschedule or cancel any previously scheduled special meeting of stockholders.

Notice of Stockholder Meetings

Lantheus Holdings' bylaws require that written notice of each stockholders' meeting must be given to stockholders of record entitled to vote at such meeting at least 10 days but not more than 60 days before the date of the meeting. Delaware

Progenics' by-laws require that notice of a stockholder meeting must be mailed to stockholders not less than 10 days or more than 60 days before the date of the meeting, unless a different period is prescribed by law. Delaware law requires

Lantheus Holdings Stockholder Rights

law requires notice of a meeting to vote on a merger agreement, a sale, lease or exchange of all or substantially all assets, a conversion to another form of entity or a transfer, domestication or conveyance to a foreign jurisdiction to be given to stockholders at least 20 days before the date of such meeting.

Lantheus Holdings' bylaws permit stockholders to nominate directors. Nominations of persons for election to the Lantheus Holdings Board may be made at an annual or special meeting of stockholders only as (i) specified in a notice of meeting (or any supplement thereto) given by or at the direction of the Lantheus Holdings Board or a duly authorized committee thereof, (ii) otherwise brought before the meeting by or at the direction of the Lantheus Holdings Board or a duly authorized committee thereof or any authorized officer of Lantheus Holdings to whom the Lantheus Holdings Board or such committee shall have delegated such authority, or (iii) as otherwise brought before the meeting by any eligible stockholder (as defined above) who complies with the notice procedures set forth in the Lantheus Holdings' bylaws.

For any nominations of persons for election as directors to be properly brought before an annual or special meeting by a stockholder pursuant to Lantheus Holdings' bylaws, an eligible stockholder must have given timely notice in writing thereof to the secretary in accordance with Lantheus Holdings' bylaws. To be considered timely, a stockholder's notice must be received by the secretary at the principal executive offices of Lantheus Holdings (i) in the case of an annual meeting, not less than 90, and not more than 120, calendar days before the first anniversary of the preceding year's annual meeting (provided, however, that in the event that the date of the annual meeting is more than 30 days before, or more than

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notice of a meeting to vote on a merger agreement, a sale, lease or exchange of all or substantially all assets, a conversion to another form of entity or a transfer, domestication or conveyance to a foreign jurisdiction to be given to stockholders at least 20 days before the date of such meeting.

Progenics' by-laws permit stockholders to nominate directors. Nominations of persons for election to the Progenics Board may be made at an annual or special meeting of stockholders, either (a) by or at the direction of the Progenics Board (or any duly authorized committee thereof), (b) by any stockholder of Progenics who (i) is a stockholder of record of Progenics on the date notice was given and who is entitled to vote at such meeting and (ii) complies with the notice procedures set forth in Progenics' by-laws, or (c) by any stockholder of Progenics who meets the requirements of and complies with the procedures set forth in Progenics' by-laws.

In order for a stockholder to make a nomination of persons for election as directors at any meeting of the stockholders, the stockholder must give timely written notice to Progenics' secretary at the principal executive offices of Progenics (i) in the case of an annual meeting, not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting of stockholders; provided, however, that in the event that the annual meeting is called for a date that is not within 30 days before or after such anniversary date, notice by the stockholder to be timely must be so received not later than the close of business on the 10th day following the day on which such notice of the date of the meeting was mailed or such public announcement of the date of such meeting is first made, whichever first occurs, and (ii) in the case of a special meeting, not later than the close of

Stockholder Nominations of Persons for Election as Directors

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days after such anniversary date, notice by the stockholder must be so delivered not earlier than 120 calendar days before such annual meeting and not later than the later of 90 calendar days before such annual meeting or, if the first public announcement of the date of such annual meeting is less than 100 days prior to the date of such annual meeting, 10 days following the day on which public announcement of the date of such meeting is first made by Lantheus Holdings) and (ii) in the case of a special meeting, not less than 90, and not more than 120, calendar days before such special meeting date, or 10 days following the day on which public announcement of the date of such meeting is first made by Lantheus Holdings, whichever first occurs. In no event shall any adjournment or postponement of an annual or special meeting, or the announcement thereof, commence a new time period for the giving of a stockholder's notice as described above.

In addition to the information required to be provided as set forth above under the row titled "Special Stockholder Meetings" (which information is to be provided pursuant to stockholder notices in connection with both annual and special meetings), an eligible stockholder's notice shall set forth (i) as to each person, if any, whom the eligible stockholder or any beneficial owner proposes to nominate for election or reelection to the board of directors: (A) all information relating to the nominee (including, without limitation, the nominee's name, age, business and residence address and principal occupation or employment and the class or series and number of shares of capital stock of Lantheus Holdings that are owned beneficially or of record by the nominee) that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for election

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business on the 10th day following the day on which notice of the date of the special meeting was mailed or public announcement of the date of the special meeting is first made, whichever first occurs. In no event shall the public announcement of an adjournment or postponement of a meeting of stockholders commence a new time period (or extend any time period) for the giving of a stockholder's notice as described above.

In addition to the information required to be provided as set forth above under the row titled "Special Stockholder Meetings" (which information is to be provided pursuant to stockholder notices in connection with both annual and special meetings), a stockholder's notice to the secretary must set forth (a) as to each person whom the stockholder proposes to nominate for election as a director: (i) the name, age, business address and residence address of the person; (ii) the principal occupation or employment of the person; (iii) (A) the class and number of shares of capital stock of Progenics which are owned beneficially or of record by the person and any affiliates or associates of such person; (B) the name of each nominee holder of shares of all stock of Progenics owned beneficially but not of record by such person or any affiliates or associates of such person, and the number of such shares of capital stock of Progenics held by each such nominee holder; (C) whether and the extent to which any derivative instrument, swap, option, warrant, short interest, hedge or profit interest or other transaction has been entered into by or on behalf of such person or any affiliates or associates of such person with respect to stock of Progenics; and (D) whether and the extent to which any other transaction, agreement, arrangement or understanding (including any short position or any borrowing or lending of shares of capital stock of Progenics) has been made by or

Lantheus Holdings Stockholder Rights

of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); (B) a description of any agreements, arrangements and understandings between or among such stockholder or any stockholder associated person, on the one hand, and any other persons (including any stockholder associated person), on the other hand, in connection with the nomination of such person for election as a director; and (C) a description of all direct and indirect compensation and other material monetary agreements, arrangements, and understandings during the past three years, and any other material relationships, between or among the eligible holder or any beneficial owner and their respective affiliates and associates, or others acting in concert therewith, on the one hand, and each proposed nominee, and his or her respective affiliates and associates, or others acting in concert therewith, on the other hand, including, without limitation all information that would be required to be disclosed pursuant to Item 404 of Regulation S-K if the eligible holder or any beneficial owner making the nomination or on whose behalf the nomination is made, if any, or any affiliate or associate thereof or person acting in concert therewith, were the "registrant" for purposes of Item 404 and the nominee were a director or executive officer of such registrant, and (ii) with respect to each nominee for election or reelection to the Lantheus Holdings Board, the eligible stockholder shall include a completed and signed questionnaire, representation, and agreement as required by Lantheus Holdings' bylaws. Lantheus Holdings may require any proposed nominee to furnish such other information as may reasonably be required by Lantheus

Progenics Stockholder Rights

on behalf of such person, or any affiliates or associates of such person, the effect or intent of any of the foregoing being to mitigate loss to, or to manage risk or benefit of share price changes for, such person, or any affiliates or associates of such person, or to increase or decrease the voting power or pecuniary or economic interest of such person, or any affiliates or associates of such person, with respect to stock of Progenics; (iv) a completed and signed questionnaire, representation and agreement as required by Progenics' by-laws; and (v) any other information relating to the person that would be required to be disclosed in a proxy statement or other filing required to be made in connection with solicitations of proxies for election of directors pursuant to Section 14 of the Exchange Act; and (b) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination is made: (i) the name and record address, as they appear on Progenics' books, of such stockholder, and of such beneficial owner; (ii) (A) the class and number of all shares of stock of Progenics which are owned beneficially and of record by such person and any affiliates or associates of such person; (B) the name of each nominee holder of shares of all stock of Progenics owned beneficially but not of record by such person or any affiliates or associates of such person, and the number of such shares of capital stock of Progenics held by each such nominee holder; (C) whether and the extent to which any derivative instrument, swap, option, warrant, short interest, hedge or profit interest or other transaction has been entered into by or on behalf of such person or any affiliates or associates of such person with respect to stock of Progenics; and (D) whether and the extent to which any other transaction, agreement, arrangement or understanding (including any short position or any borrowing or lending of shares of capital stock of Progenics) has been made by or

Lantheus Holdings Stockholder Rights

Holdings to determine the eligibility of the proposed nominee to serve as an independent director of Lantheus Holdings or that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of the nominee.

Progenics Stockholder Rights

on behalf of such person, or any affiliates or associates of such person, the effect or intent of any of the foregoing being to mitigate loss to, or to manage risk or benefit of share price changes for, such person, or any affiliates or associates of such person, or to increase or decrease the voting power or pecuniary or economic interest of such person, or any affiliates or associates of such person, with respect to stock of Progenics; (iii) a description of all agreements, arrangements, or understandings (whether written or oral) between or among such person, or any affiliates or associates of such person, and any proposed nominee or any other person or persons (including their names) in connection with such nomination and any material interest of such person, or any affiliates or associates of such person, in such nomination, including any anticipated benefit therefrom to such person, or any affiliates or associates of such person; (iv) a representation whether such person, or any affiliates or associates of such person, intends or is part of a group which intends (A) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of Progenics' outstanding capital stock required to elect the nominee and/or (B) otherwise to solicit proxies or votes from stockholders in support of such nomination; (v) a representation that the stockholder giving the notice intends to appear in person or by proxy at the meeting to nominate the persons named in its notice; and (vi) any other information relating to such person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with the solicitation of proxies for election of directors, or may otherwise be required, in each case pursuant to Section 14 of the Exchange Act.

**Stockholder Proposals
(other than Nomination of
Persons for Election as
Directors)**

Lantheus Holdings Stockholder Rights

Lantheus Holdings' bylaws provide that business to be conducted and proposals to be acted upon may be made at an annual or special meeting of stockholders only as (i) specified in a notice of meeting (or any supplement thereto) given by or at the direction of the Lantheus Holdings Board or a duly authorized committee thereof, (ii) otherwise brought before the meeting by or at the direction of the Lantheus Holdings Board or a duly authorized committee thereof or any authorized officer of Lantheus Holdings to whom the Lantheus Holdings Board or such committee shall have delegated such authority, or (iii) as otherwise brought before the meeting by any eligible stockholder (as defined above) who complies with the notice procedures set forth in Lantheus Holdings' bylaws.

To be considered timely, a stockholder's notice must be received by Lantheus Holdings' secretary according to the timing requirements described above in the section titled "Comparison of Stockholder Rights—Stockholder Nomination of Persons for Election as Directors" beginning on page 197 of this joint proxy statement/prospectus, which requirements also apply to stockholder proposals other than nomination of persons for election as directors.

In addition to the information required to be provided as set forth above in the section titled "Comparison of Stockholder Rights—Special Stockholder Meetings" beginning on page 197 of this joint proxy statement/prospectus (which information is to be provided pursuant to stockholder notices in connection with both annual and special meetings), an eligible stockholder's notice shall set forth: (i) a brief description of the business desired to be brought before the meeting (including the text of any resolutions proposed for consideration), the reasons for conducting such business at the meeting, and any material direct or indirect interest of the eligible

Progenics Stockholder Rights

Progenics' by-laws provide that at an annual meeting of stockholders no business may be transacted other than business that is either (i) specified in a notice from Progenics with respect to such meeting, (ii) otherwise properly brought before the annual meeting by or at the direction of the board of directors or (iii) properly brought by any stockholder of Progenics who was a stockholder of record at the time of giving of such stockholder's notice as provided for in Progenics' by-laws, who is entitled to vote at the meeting and who has complied with the notice procedures set forth in Progenics' by-laws.

To be considered timely, a stockholder's notice must be received by Progenics' secretary according to the timing requirements described above in the section titled "Comparison of Stockholder Rights—Stockholder Nomination of Persons for Election as Directors" beginning on page 197 of this joint proxy statement/prospectus, which requirements also apply to stockholder proposals other than nomination of persons for election as directors.

To be in proper written form, such stockholder's notice must set forth the following information: (a) as to each matter that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event that such business includes a proposal to amend Progenics' by-laws, the language of the proposed amendment), the reasons for conducting such business at the meeting and any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made; and (b) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the proposal is made (i) the name and

Lantheus Holdings Stockholder Rights

stockholder or any beneficial owner or any stockholder associated persons in such business; and (ii) a description of all agreements, arrangements and understandings, direct and indirect, between the eligible stockholder or any beneficial owner, and any other person or persons (including their names) in connection with the proposal of such business by the eligible stockholder or any beneficial owner.

Progenics Stockholder Rights

address of such person; (ii) (A) the class and number of all shares of stock of Progenics which are owned beneficially or of record by such person, and any affiliates or associates of such person, (B) the name of each nominee holder of shares of all stock of Progenics owned beneficially but not of record by such person or any affiliates or associates of such person, and the number of such shares of stock of the Corporation held by each such nominee holder, (C) whether and the extent to which any derivative instrument, swap, option, warrant, short interest, hedge or profit interest or other transaction has been entered into by or on behalf of such person, or any affiliates or associates of such person, with respect to the capital stock of Progenics and (D) whether and the extent to which any other transaction, agreement, arrangement or understanding (including any short position or any borrowing or lending of shares of capital stock of Progenics) has been made by or on behalf of such stockholder, or any affiliates or associates of such stockholder, or such beneficial owner, the effect or intent of any of the foregoing being to mitigate loss to, or to manage risk or benefit of share price changes for, such stockholder, or any affiliates or associates of such stockholder, or such beneficial owner, or to increase or decrease the voting power or pecuniary or economic interest of such stockholder, or any affiliates or associates of such stockholder, or such beneficial owner with respect to securities of Progenics; (iii) a description of all agreements, arrangements, or understandings (whether written or oral) between or among such person, and any other person or persons (including their names) in connection with the proposal of such business and any material interest of such person, in such business, including any anticipated benefit therefrom to such person; (iv) a representation whether the stockholder giving notice intends or is part of a group which intends (A) to

Lantheus Holdings Stockholder Rights

Progenics Stockholder Rights

Limitation of Liability of Directors and Officers

Delaware law provides that a corporation may limit or eliminate a director's personal liability for monetary damages to the corporation or its stockholders for breach of fiduciary duty as a director, except for liability for: (i) any breach of the director's duty of loyalty to such corporation or its stockholders; (ii) acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (iii) willful or negligent violation of provisions of Delaware law governing payment of dividends and stock purchases or redemptions; (iv) any transaction from which the director derived an improper personal benefit; or (v) any act or omission before the adoption of such a provision in the corporation's certificate of incorporation.

deliver a proxy statement and/or form of proxy to holders of at least the percentage of Progenics' outstanding capital stock required to approve or adopt the proposal and/or (B) otherwise to solicit proxies or votes from stockholders in support of such proposal; (v) a representation that the stockholder giving notice intends to appear in person or by proxy at the annual meeting to bring such business before the meeting; and (vi) any other information relating to such person that would be required to be disclosed in a proxy statement or other filing required to be made in connection with the solicitation of proxies by such person with respect to such matters, or may otherwise be required, in each case pursuant to Section 14 of the Exchange Act.

A special meeting request for any item of business other than the nomination of any director to the Progenics Board must comply with the requirements set forth in Progenics' by-laws, which are described in greater detail in the section titled "Comparison of Stockholder Rights—Special Stockholder Meetings" beginning on page 197 of this joint proxy statement/prospectus.

Delaware law provides that a corporation may limit or eliminate a director's personal liability for monetary damages to the corporation or its stockholders for breach of fiduciary duty as a director, except for liability for: (i) any breach of the director's duty of loyalty to such corporation or its stockholders; (ii) acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (iii) willful or negligent violation of provisions of Delaware law governing payment of dividends and stock purchases or redemptions; (iv) any transaction from which the director derived an improper personal benefit; or (v) any act or omission before the adoption of such a provision in the corporation's certificate of incorporation.

Lantheus Holdings Stockholder Rights

Lantheus Holdings' certificate of incorporation provides that directors are not personally liable to Lantheus Holdings or its stockholders for monetary damages for any breach of fiduciary duty as a director to the fullest extent permitted by Delaware law, as the same exists or may be hereafter amended.

Indemnification of Directors, Officers, Employees and Agents

Lantheus Holdings' certificate of incorporation and bylaws provide that Lantheus Holdings will indemnify and hold harmless to the fullest extent permitted by law, any person (and the heirs, executors or administrators of such person) who is a party or otherwise involved in any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such person is or was a director or officer of Lantheus Holdings or is or was serving at the request of Lantheus Holdings as a director or officer of another corporation, partnership, joint venture, trust or other enterprise. The right to indemnification conferred in Lantheus Holdings' certificate of incorporation and bylaws also includes the right to be paid by Lantheus Holdings the expenses incurred in connection with any such proceeding in advance of its final disposition to the fullest extent authorized by Delaware law. Additionally, under Lantheus Holdings' certificate of incorporation and bylaws, the Lantheus Holdings Board can provide indemnification to employees and agents of Lantheus Holdings to such extent as the Lantheus Holdings Board determines to be appropriate in its discretion from time to time.

Appraisal Rights or Dissenters' Rights

Under Delaware law, stockholders of a Delaware corporation have the right in certain mergers or consolidations to which the corporation is a party, to demand payment for the fair value of their shares pursuant to, and in compliance with procedures set forth in Section 262 of the DGCL, except in connection with a merger or

Progenics Stockholder Rights

Progenics' certificate of incorporation eliminates the personal liability of directors of Progenics to the fullest extent permitted by Delaware law, as the same may be amended or supplemented.

Progenics' certificate of incorporation and by-laws provides that Progenics will indemnify, to the fullest extent permitted by Delaware law, any person (and the heirs, executors or administrators of such person) who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether criminal, civil, administrative or investigative, by reason of the fact that such person is or was a director, officer, employee or agent of Progenics, or is or was serving at the request of Progenics as a director, trustee, partner, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise or non-profit entity against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such proceeding. The right to indemnification conferred in Progenics' certificate of incorporation and by-laws also includes the right to be paid by Progenics the expenses incurred in connection with any such proceeding in advance of its final disposition to the fullest extent authorized by Delaware law.

Under Delaware law, stockholders of a Delaware corporation have the right in certain mergers or consolidations to which the corporation is a party, to demand payment for the fair value of their shares pursuant to, and in compliance with procedures set forth in Section 262 of the DGCL, except in connection with a merger or

Lantheus Holdings Stockholder Rights

consolidation with respect to shares (i) listed on a national securities exchange or held of record by more than 2,000 holders and (ii) for which, pursuant to the plan of merger or consolidation, stockholders will receive only (A) shares or depository receipts of another corporation which at the date the merger or consolidation is completed will be either listed on a national securities exchange or held of record by more than 2,000 holders, (B) shares of stock or depository receipts of the surviving corporation in the merger or consolidation, (C) cash in lieu of fractional shares or (D) any combination of the foregoing. Delaware law also provides that, subject to certain exceptions, stockholders of a surviving corporation do not have appraisal rights in connection with a plan of merger if the merger did not require for its approval the vote of the surviving corporation's stockholders. Delaware law permits the certificate of incorporation of a Delaware corporation to provide for appraisal rights in mergers or consolidations in which appraisal rights are not otherwise available and in connection with amendments to the certificate of incorporation and sales of all or substantially all assets. Lantheus Holdings' certificate of incorporation contains no provisions giving rise to appraisal rights in such transactions.

Additionally, pursuant to Section 262 of the DGCL, if immediately before a merger or consolidation the shares of a class or series of stock of a corporation as to which appraisal rights are available were listed on a national securities exchange, the Delaware Court of Chancery must dismiss an appraisal proceeding as to all stockholders who assert appraisal rights unless (i) the total number of shares entitled to appraisal exceeds 1% of the outstanding shares of the class or series eligible for appraisal, or (ii) the value of the consideration provided in the merger or consolidation

Progenics Stockholder Rights

consolidation with respect to shares (i) listed on a national securities exchange or held of record by more than 2,000 holders and (ii) for which, pursuant to the plan of merger or consolidation, stockholders will receive only (A) shares or depository receipts of another corporation which at the date the merger or consolidation is completed will be either listed on a national securities exchange or held of record by more than 2,000 holders, (B) shares of stock or depository receipts of the surviving corporation in the merger or consolidation, (C) cash in lieu of fractional shares or (D) any combination of the foregoing. Delaware law also provides that, subject to certain exceptions, stockholders of a surviving corporation do not have appraisal rights in connection with a plan of merger if the merger did not require for its approval the vote of the surviving corporation's stockholders. Delaware law permits the certificate of incorporation of a Delaware corporation to provide for appraisal rights in mergers or consolidations in which appraisal rights are not otherwise available and in connection with amendments to the certificate of incorporation and sales of all or substantially all assets. Progenics' certificate of incorporation contains no provisions giving rise to appraisal rights in such transactions.

Additionally, pursuant to Section 262 of the DGCL, if immediately before a merger or consolidation the shares of a class or series of stock of a corporation as to which appraisal rights are available were listed on a national securities exchange, the Delaware Court of Chancery must dismiss an appraisal proceeding as to all stockholders who assert appraisal rights unless (i) the total number of shares entitled to appraisal exceeds 1% of the outstanding shares of the class or series eligible for appraisal, or (ii) the value of the consideration provided in the merger or consolidation

Lantheus Holdings Stockholder Rights

Progenics Stockholder Rights

for such total number of shares seeking appraisal exceeds \$1 million, or (iii) the merger was approved pursuant to Section 253 or Section 267 of the DGCL.

for such total number of shares seeking appraisal exceeds \$1 million, or (iii) the merger was approved pursuant to Section 253 or Section 267 of the DGCL.

At any time before the entry of judgment in the proceedings, the surviving corporation may pay to each stockholder entitled to appraisal an amount in cash, in which case interest will accrue thereafter as provided herein only upon the sum of (i) the difference, if any, between the amount so paid and the fair value of the shares as determined by the Court, and (ii) interest theretofore accrued, unless paid at that time.

At any time before the entry of judgment in the proceedings, the surviving corporation may pay to each stockholder entitled to appraisal an amount in cash, in which case interest will accrue thereafter as provided herein only upon the sum of (i) the difference, if any, between the amount so paid and the fair value of the shares as determined by the Court, and (ii) interest theretofore accrued, unless paid at that time.

Dividends and Stock Repurchases

Under Lantheus Holdings' certificate of incorporation and bylaws, subject to the preferential rights of any holders of outstanding preferred stock or any other class of stock having preference over the common stock, holders of Lantheus Holdings common stock are entitled to receive, to the extent permitted by law, such dividends as the Lantheus Holdings Board may declare from time to time from funds available therefor.

Under Progenics' certificate of incorporation, subject to any rights of any outstanding series of Progenics shares senior to the shares of Progenics common stock, the holders of Progenics common stock are entitled to such dividends as may be declared from time to time by the Progenics Board from funds available therefor.

Stockholder Vote on Fundamental or Extraordinary Corporate Transactions

Under Delaware law, a sale, lease or exchange of all or substantially all of Lantheus Holdings' assets, an amendment to Lantheus Holdings' certificate of incorporation, a merger or consolidation of Lantheus Holdings with another corporation or a dissolution of a corporation generally requires the affirmative vote of the Lantheus Holdings Board and, with limited exceptions, the affirmative vote of a majority of the aggregate voting power of the outstanding stock entitled to vote on the transaction.

Under Delaware law, a sale, lease or exchange of all or substantially all of Progenics' assets, an amendment to Progenics' certificate of incorporation, a merger or consolidation of Progenics with another corporation or a dissolution of a corporation generally requires the affirmative vote of the Progenics Board and, with limited exceptions, the affirmative vote of a majority of the aggregate voting power of the outstanding stock entitled to vote on the transaction.

State Antitakeover Provisions

Lantheus Holdings has not opted out of Section 203 of the DGCL, which provides that, if a person acquires 15% or more of the outstanding voting stock of Lantheus Holdings, thereby becoming an "interested stockholder," that person may not engage in certain "business

Progenics has not opted out of Section 203 of the DGCL, which provides that, if a person acquires 15% or more of the outstanding voting stock of Progenics, thereby becoming an "interested stockholder," that person may not engage in certain "business

Lantheus Holdings Stockholder Rights

combinations” with Lantheus Holdings, including mergers, purchases and sales of 10% or more of its assets, stock purchases and other transactions pursuant to which the percentage of Lantheus Holdings’ stock owned by the interested stockholder increases (other than on a pro rata basis) or pursuant to which the interested stockholder receives a financial benefit from the corporation, for a period of three years after becoming an interested stockholder, unless one of the following exceptions applies: (i) the Lantheus Holdings Board approved the acquisition of stock pursuant to which the person became an interested stockholder or the transaction that resulted in the person becoming an interested stockholder prior to the time that the person became an interested stockholder; (ii) upon consummation of the transaction that resulted in the person becoming an interested stockholder such person owned at least 85% of the outstanding voting stock of the corporation, excluding, for purposes of determining the voting stock outstanding, voting stock owned by directors who are also officers and certain employee stock plans; or (iii) the transaction is approved by the Lantheus Holdings Board and by the affirmative vote of two-thirds of the outstanding voting stock which is not owned by the interested stockholder. An “interested stockholder” also includes the affiliates and associates of a 15% or more owner and any affiliate or associate of the corporation who was the owner of 15% or more of the outstanding voting stock within the three-year period prior to determining whether a person is an interested stockholder.

Progenics Stockholder Rights

combinations” with Progenics, including mergers, purchases and sales of 10% or more of its assets, stock purchases and other transactions pursuant to which the percentage of Progenics’ stock owned by the interested stockholder increases (other than on a pro rata basis) or pursuant to which the interested stockholder receives a financial benefit from the corporation, for a period of three years after becoming an interested stockholder, unless one of the following exceptions applies: (i) the Progenics Board approved the acquisition of stock pursuant to which the person became an interested stockholder or the transaction that resulted in the person becoming an interested stockholder prior to the time that the person became an interested stockholder; (ii) upon consummation of the transaction that resulted in the person becoming an interested stockholder such person owned at least 85% of the outstanding voting stock of the corporation, excluding, for purposes of determining the voting stock outstanding, voting stock owned by directors who are also officers and certain employee stock plans; or (iii) the transaction is approved by the Progenics Board and by the affirmative vote of two-thirds of the outstanding voting stock which is not owned by the interested stockholder. An “interested stockholder” also includes the affiliates and associates of a 15% or more owner and any affiliate or associate of the corporation who was the owner of 15% or more of the outstanding voting stock within the three-year period prior to determining whether a person is an interested stockholder.

Stockholder Rights Plan

While Delaware law does not include a statutory provision expressly authorizing stockholder rights plans, such rights plans have generally been found to be authorized by Delaware law and have been upheld by Delaware courts where they are adopted in response to a reasonably perceived threat to a

While Delaware law does not include a statutory provision expressly authorizing stockholder rights plans, such rights plans have generally been found to be authorized by Delaware law and have been upheld by Delaware courts where they are adopted in response to a reasonably perceived threat to a

Lantheus Holdings Stockholder Rights

Progenics Stockholder Rights

corporation and its stockholders, and maintaining such rights plans in response to such threat has been found to be reasonable in relation to the threat posed.

corporation and its stockholders, and maintaining such rights plans in response to such threat has been found to be reasonable in relation to the threat posed.

Lantheus Holdings does not currently have a stockholder rights plan, but the Lantheus Holdings Board has the power under Delaware law to adopt a stockholder rights plan in the future, subject to its fiduciary duties.

Progenics does not currently have a stockholder rights plan, but the Progenics Board has the power under Delaware law to adopt a stockholder rights plan in the future, subject to its fiduciary duties.

Preemptive Rights

Under Delaware law, stockholders of a corporation do not have preemptive rights to subscribe for or purchase any additional issue of stock or to any security convertible into such stock, unless such right is expressly included in the certificate of incorporation.

Under Delaware law, stockholders of a corporation do not have preemptive rights to subscribe for or purchase any additional issue of stock or to any security convertible into such stock, unless such right is expressly included in the certificate of incorporation.

Lantheus Holdings' certificate of incorporation provides that no holders of shares of Lantheus Holdings common stock shall have any preemptive rights.

Progenics' certificate of incorporation does not provide holders of shares of Progenics stock with preemptive rights.

Duties of Directors

Under Delaware law, the standards of conduct for directors of corporations are not statutory but are based on fiduciary duty principles developed by the Delaware courts. Generally, directors of Delaware corporations are subject to a duty of loyalty and a duty of care. The duty of loyalty requires directors to act with the sole purpose of advancing the best interests of the corporation and its stockholders and the duty of care requires directors in managing the corporation's affairs to use the level of care that ordinarily careful and prudent persons would use in similar circumstances. Directors owe fiduciary duties of loyalty and care to the corporation and its stockholders. Fiduciary duties are not owed to non-stockholder constituencies such as customers and employees.

Under Delaware law, the standards of conduct for directors of corporations are not statutory but are based on fiduciary duty principles developed by the Delaware courts. Generally, directors of Delaware corporations are subject to a duty of loyalty and a duty of care. The duty of loyalty requires directors to act with the sole purpose of advancing the best interests of the corporation and its stockholders and the duty of care requires directors in managing the corporation's affairs to use the level of care that ordinarily careful and prudent persons would use in similar circumstances. Directors owe fiduciary duties of loyalty and care to the corporation and its stockholders. Fiduciary duties are not owed to non-stockholder constituencies such as customers and employees.

Exclusive Forum

Under Lantheus Holdings' certificate of incorporation, unless Lantheus Holdings consents in writing in advance to the selection of an alternative forum, the Court of Chancery of the State of

Under Progenics' by-laws, unless Progenics consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent

Lantheus Holdings Stockholder Rights

Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of Lantheus Holdings, (ii) any action asserting a claim of breach of a fiduciary duty owed by, or any wrongdoing by, any director, officer or employee of Lantheus Holdings to Lantheus Holdings or Lantheus Holdings stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL, Lantheus Holdings' certificate of incorporation, or Lantheus Holdings' bylaws, (iv) any action to interpret, apply, enforce or determine the validity of Lantheus Holdings' certificate of incorporation or Lantheus Holdings' bylaws, or (v) any action asserting a claim governed by the internal affairs doctrine.

Progenics Stockholder Rights

permitted by law, be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of Progenics, (ii) any action asserting a claim of breach of a fiduciary duty owed by any current or former director, officer, other employee or stockholder of Progenics to Progenics or Progenics' stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL, the Progenics' certificate of incorporation or Progenics' by-laws or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware, or (iv) any action asserting a claim arising out of or relating to Progenics' internal affairs.

LEGAL MATTERS

The validity of the shares of Lantheus Holdings common stock to be issued to Progenics stockholders pursuant to the merger will be passed upon for Lantheus Holdings by White & Case. Certain U.S. federal income tax consequences relating to the merger will be passed upon for Lantheus Holdings by White & Case and for Progenics by O'Melveny.

EXPERTS

The financial statements of Lantheus Holdings, Inc. and its subsidiaries incorporated in this joint proxy statement/prospectus by reference from Lantheus Holdings, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

The consolidated financial statements of Progenics Pharmaceuticals, Inc. appearing in Progenics Pharmaceuticals, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2018, and the effectiveness of Progenics Pharmaceuticals, Inc.'s internal control over financial reporting as of December 31, 2018, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

FUTURE STOCKHOLDER PROPOSALS

Lantheus Holdings

Lantheus Holdings Stockholder Proposals for Inclusion in Proxy Materials

Lantheus Holdings will hold an annual meeting of stockholders in 2020, which is referred to in this joint proxy statement/prospectus as the Lantheus Holdings 2020 annual meeting, regardless of whether the merger has been completed. A stockholder seeking to have a proposal included in the proxy statement for Lantheus Holdings' 2020 annual meeting must comply with Rule 14a-8 under the Exchange Act, which sets forth the requirements for including stockholder proposals in company-sponsored proxy materials. In accordance with Rule 14a-8, for a stockholder proposal to be considered for inclusion in the proxy statement for Lantheus Holdings' 2020 annual meeting, it must be submitted in writing to Lantheus Holdings' corporate secretary no later than November 16, 2019.

Lantheus Holdings Stockholder Proposals and Nomination of Director Candidates Not Intended for Inclusion in Proxy Materials

A stockholder seeking to present a proposal or nominate a director for election to the Lantheus Holdings Board at the Lantheus Holdings 2020 annual meeting but not intending for such proposal or nomination to be included in the proxy statement for the meeting must comply with the advance notice requirements set forth in Lantheus Holdings' bylaws. Lantheus Holdings' bylaws require a stockholder seeking to present a proposal or nominate a director for the Lantheus Holdings 2020 annual meeting to provide written notice to Lantheus Holdings' Corporate Secretary (i) no earlier than the close of business on December 26, 2019 and (ii) no later than the close of business on January 25, 2020. However, if the Lantheus Holdings 2020 annual meeting occurs more than 30 days before or 60 days after April 24, 2020, proposals must be delivered not less than 90 days or more than 120 days before the meeting date or, if the first public announcement of the meeting date is less than 100 days prior to the annual meeting date, then no later than the 10th day following the date of the first public announcement of the meeting date. Director nominations for consideration at any special meeting of stockholders called for the purpose of electing directors must be delivered no earlier than the close of business on the 120th day prior to the special meeting date and not later than the close of business on the latest of the 90th day prior to the special meeting or the 10th day following the date of the first public announcement of the meeting date.

In order to comply with the advance notice requirements set forth in Lantheus Holdings' bylaws, stockholders must be a holder of record or other nominee and must comply with the other requirements of the advance notice requirements included in Lantheus Holdings' bylaws, which can be found in Section 1.12. To obtain a copy of Lantheus Holdings' bylaws at no charge, you may write to Lantheus Holdings' Corporate Secretary at 331 Treble Cove Road, North Billerica, Massachusetts 01862.

Progenics

Progenics Stockholder Proposals for Inclusion in Proxy Materials

A stockholder seeking to have a proposal included in the proxy statement for Progenics' 2020 annual meeting must comply with Rule 14a-8 under the Exchange Act, which sets forth the requirements for including stockholder proposals in company-sponsored proxy materials. In accordance with Rule 14a-8, for a stockholder proposal to be considered for inclusion in the proxy statement for Progenics' 2020 annual meeting, it must be submitted in writing to Progenics' Corporate Secretary no later than Friday, January 31, 2020, which is 120 days prior to the one-year anniversary of the date Progenics' proxy statement for the 2019 Progenics Annual Meeting was first mailed or made available to stockholders. If Progenics receives notice after that date of a stockholder's intent to present a proposal at its 2020 annual meeting, Progenics will have the right to exercise discretionary voting authority with respect to such proposal, if presented at the meeting, without including information regarding such proposal in Progenics' proxy materials. However, if the date of the 2020 annual meeting changes by more than 30 days from the one-year anniversary of the date of the 2019 Progenics Annual Meeting, then such proposals must be received a reasonable time before Progenics begins to print and send its proxy materials for the 2020 annual meeting.

Progenics Stockholder Proposals and Nomination of Director Candidates Not Intended for Inclusion in Proxy Materials

A stockholder seeking to present a proposal or nominate a director for election to the Progenics Board at the Progenics 2020 annual meeting 2020 annual meeting but not intending for such proposal or nomination to be included in the proxy statement for the meeting must comply with the advance notice requirements set forth in Progenics' by-laws. Progenics' by-laws require a stockholder seeking to present a proposal or nominate a director for the 2020 annual meeting to provide written notice to Progenics' Corporate Secretary at One World Trade Center, 47th Floor, Suite J, New York, NY 10007 (i) no earlier than Friday, March 13, 2020, 120 days prior to the first anniversary of the 2019 Progenics Annual Meeting, and (ii) no later than Sunday, April 12, 2020, 90 days prior to such first anniversary. In order to comply with the advance notice requirements set forth in Progenics' by-laws, stockholders must be a holder of record and must comply with the other requirements of the advance notice requirements included in Progenics' by-laws, which can be found in Section 3.05 (with respect to director nominations) and Section 3.06 (with respect to stockholder proposals). To obtain a copy of Progenics' by-laws at no charge, you may write to Progenics' Corporate Secretary at the address set forth in this paragraph.

Requirements for Director Nominations to be Considered for Inclusion in Proxy Materials (i.e., Proxy Access)

Under certain circumstances specified in Progenics' by-laws, a stockholder, or group of no more than 20 stockholders, owning at least three percent of Progenics' outstanding common stock continuously for at least the prior three years, may nominate for election to the Progenics Board and inclusion in the proxy materials Progenics distributes for its annual meeting of stockholders up to the greater of two directors or 25 percent (rounded down to the nearest whole number) of the number of directors then serving on the Progenics Board. Stockholders who wish to nominate persons for election to the Progenics Board at the 2020 annual meeting and have those director nominees included in the proxy materials distributed by Progenics for such meeting, must deliver written notice of the nomination to Progenics' Corporate Secretary at One World Trade Center, 47th Floor, Suite J, New York, NY 10007 no earlier than Wednesday, January 1, 2020 and no later than Friday, January 31, 2020. In the event that the 2020 annual meeting is called for a date that is not within 30 days before or after Saturday, July 11, 2020, which is referred to in this joint proxy statement/prospectus as an other meeting date, such written notice of nomination must be received not later than the close of business on the later of the date that is 180 days prior to such other meeting date and the 10th day following the day on which the date of such other meeting date is first publicly announced or disclosed by Progenics. Other specifics regarding the foregoing proxy access right, including the required content of the notice and certain other eligibility and procedural requirements, can be found in Section 3.07 of Progenics' by-laws. To obtain a copy of Progenics' by-laws at no charge, you may write to Progenics' Corporate Secretary at the address set forth in this paragraph.

However, if the merger is completed, Progenics will not have public stockholders and there will be no public participation in any future meeting of stockholders. Progenics may determine to change the date of its 2020 annual meeting and/or may not hold its annual meeting of stockholders at all if the merger is completed in the anticipated timeframe.

WHERE YOU CAN FIND MORE INFORMATION

Lantheus Holdings has filed a registration statement on Form S-4 to register with the SEC the shares of Lantheus Holdings common stock to be issued to Progenics stockholders in connection with the merger. This joint proxy statement/prospectus is a part of that registration statement and constitutes a prospectus of Lantheus Holdings in addition to being proxy statements of Lantheus Holdings and Progenics for their respective special meetings. The registration statement, including the attached exhibits and schedules, contains additional relevant information about Lantheus Holdings and the shares of Lantheus Holdings common stock. The rules and regulations of the SEC allow Lantheus Holdings and Progenics to omit certain information included in the registration statement from this joint proxy statement/prospectus.

Lantheus Holdings and Progenics file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC filings of Lantheus Holdings and Progenics also are available to the public at the SEC website at www.sec.gov. In addition, you may obtain free copies of the documents Lantheus Holdings files with the SEC, including the registration statement on Form S-4, of which this joint proxy statement/prospectus forms a part, by going to Lantheus Holdings' website at www.lantheus.com. You may obtain free copies of the documents Progenics files with the SEC by going to Progenics' website at www.progenics.com. The website addresses of Lantheus Holdings and Progenics are provided as inactive textual references only. The information provided on the websites of Lantheus Holdings and Progenics, other than copies of the documents listed below that have been filed with the SEC, is not part of this joint proxy statement/prospectus and, therefore, is not incorporated herein by reference.

The SEC allows Lantheus Holdings and Progenics to "incorporate by reference" into this joint proxy statement/prospectus documents that Lantheus Holdings and Progenics file with the SEC, including certain information required to be included in the registration statement on Form S-4 filed by Lantheus Holdings to register the shares of Lantheus Holdings common stock that will be issued in the merger, of which this joint proxy statement/prospectus forms a part. This means that important information can be disclosed to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this joint proxy statement/prospectus, except for any information superseded by information contained directly in this joint proxy statement/prospectus or in later filed documents incorporated by reference into this joint proxy statement/prospectus. This joint proxy statement/prospectus, and the registration statement of which this joint proxy statement/prospectus forms a part, incorporates by reference the documents set forth below that Lantheus Holdings and Progenics have, respectively, previously filed with the SEC and any additional documents that either company may file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this joint proxy statement/prospectus and before the respective dates of Progenics' and Lantheus Holdings' special meetings (other than, in each case, those documents, or the portions of those documents or exhibits thereto, deemed to be furnished and not filed in accordance with SEC rules). In the event of conflicting information in these documents, the information in the latest filed documents should be considered correct. These documents contain important information about Lantheus Holdings and Progenics and their respective financial performance that is not included in or delivered with this joint proxy statement/prospectus.

Lantheus Holdings SEC Filings (File No. 001-36569)

Annual Report on Form 10-K

Period

Fiscal year ended [December 31, 2018](#)

Quarterly Reports on Form 10-Q

Fiscal quarters ended [March 31, 2019](#), [June 30, 2019](#) and [September 30, 2019](#)

Proxy Statement on Schedule 14A

Filed on [March 15, 2019](#), as supplemented on April 5, 2019

Current Reports on Form 8-K

Filed on [January 28, 2019](#), [March 25, 2019](#), [April 19, 2019](#), [April 26, 2019](#), [July 1, 2019](#), [October 2, 2019](#), [November 5, 2019](#) and [November 7, 2019](#)

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Lantheus Holdings SEC Filings (File No. 001-36569)

The description of Lantheus Holdings common stock contained in Lantheus Holdings' registration statement on Form 8-A filed under Section 12 of the Exchange Act on July 25, 2014, including any subsequently filed amendments and reports updating such description.

Period

Progenics SEC Filings (File No. 000-23143)

Annual Report on Form 10-K

Period

Fiscal year ended [December 31, 2018](#)

Amendment No. 1 to Annual Report on Form 10-K/A

Filed on [April 30, 2019](#)

Quarterly Reports on Form 10-Q

Fiscal quarters ended [March 31, 2019](#), [June 30, 2019](#) and [September 30, 2019](#)

Current Reports on Form 8-K

Filed on [April 1, 2019](#), [April 8, 2019](#), [April 22, 2019](#), [May 6, 2019](#), [May 7, 2019](#), [May 14, 2019](#), [June 5, 2019](#), [July 17, 2019 \(as amended by the Current Report on Form 8-K/A filed on July 22, 2019\)](#), [August 8, 2019](#), [October 2, 2019](#), [October 18, 2019](#), [October 22, 2019](#), [October 23, 2019](#), [October 29, 2019](#), November 1, 2019 and November 12, 2019

Lantheus Holdings has supplied all information contained in or incorporated by reference into this joint proxy statement/prospectus relating to Lantheus Holdings, as well as all pro forma financial information, and Progenics has supplied all such information relating to Progenics.

Documents incorporated by reference are available from Lantheus Holdings or Progenics, as the case may be, without charge, excluding any exhibits to those documents, unless the exhibit is specifically incorporated by reference into this joint proxy statement/prospectus. Progenics stockholders or Lantheus Holdings stockholders, as applicable, may obtain these documents incorporated by reference by requesting them in writing or by telephone from the appropriate party at the following addresses and telephone numbers:

Lantheus Holdings, Inc.
331 Treble Cove Road
North Billerica, Massachusetts 01862
Attention: Corporate Secretary
Telephone: (978) 671-8842

Progenics Pharmaceuticals, Inc.
One World Trade Center, 47th Floor
New York, New York 10007
Attention: Corporate Secretary
Telephone: (646) 975-2500

To obtain timely delivery of the documents, you must request them no later than the dates specified in this joint proxy statement/prospectus. If you would like to request documents from Lantheus Holdings, please do so by [●] in order to receive them before the Lantheus Holdings special meeting. If you would like to request documents from Progenics, please do so by [●] in order to receive them before the Progenics special meeting.

Neither Lantheus Holdings nor Progenics has authorized anyone to provide you with information that is different from what is contained in this joint proxy statement/prospectus.

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If you are in a jurisdiction where offers to exchange or sell, or solicitations of offers to exchange or purchase, the securities offered by this joint proxy statement/prospectus or solicitations of proxies are unlawful, or if you are a person to whom it is unlawful to direct these types of activities, then the offer presented in this joint proxy statement/prospectus does not extend to you.

The information contained in this joint proxy statement/prospectus speaks only as of the date of this joint proxy statement/prospectus unless the information specifically indicates that another date applies. You should not assume that the information in it is accurate as of any date other than that date, and neither its mailing to Progenics stockholders or Lantheus Holdings stockholders nor the issuance of shares of Lantheus Holdings common stock in the merger on the terms and conditions set forth in the merger agreement will create any implication to the contrary.

You should rely only on the information contained in or incorporated by reference into this joint proxy statement/prospectus to vote on the merger agreement proposal, the proposal to adjourn from time to time the Progenics special meeting if necessary to solicit additional proxies if there are not sufficient votes at the time of the Progenics special meeting, or any adjournment or postponement thereof, to adopt the merger agreement, the non-binding advisory proposal to approve the compensation that will or may be paid or provided by Progenics to its named executed officers in connection with the mergers, the approval of the stock issuance proposal and the proposal to adjourn the Lantheus Holdings special meeting if necessary. Neither Lantheus Holdings nor Progenics has authorized anyone to provide you with information that is different from what is contained in this joint proxy statement/prospectus.

ANNEX A
Agreement and Plan of Merger

A-1

AGREEMENT AND PLAN OF MERGER
AMONG
LANTHEUS HOLDINGS, INC.,
PLATO MERGER SUB, INC.
AND
PROGENICS PHARMACEUTICALS, INC.
DATED AS OF OCTOBER 1, 2019

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Exhibit B	-	Form of Parent Tax Opinion
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Exhibit D	-	Form of Parent Certificate
Exhibit E	-	Form of Company Certificate

AGREEMENT AND PLAN OF MERGER

This Agreement and Plan of Merger, dated as of October 1, 2019 (this “Agreement”), is made and entered into among Lantheus Holdings, Inc., a Delaware corporation (“Parent”), Plato Merger Sub, Inc., a Delaware corporation and a wholly-owned Subsidiary of Parent (“Merger Sub”), and Progenics Pharmaceuticals, Inc., a Delaware corporation (the “Company”). Parent, Merger Sub and the Company are referred to individually as a “Party” and collectively as the “Parties”. Capitalized terms have the meanings given to them in Section 1.1.

RECITALS

WHEREAS, the Parties desire that Parent (through the Merger Sub) acquire the Company, on the terms and subject to the conditions set forth in this Agreement;

WHEREAS, in furtherance thereof, and on the terms and subject to the conditions set forth in this Agreement and in accordance with the General Corporation Law of the State of Delaware (the “DGCL”), Merger Sub shall be merged with and into the Company (the “Merger” and, together with the other transactions contemplated by this Agreement, the “Transactions”), with the Company surviving the Merger as a wholly-owned Subsidiary of Parent;

WHEREAS, the Board of Directors of the Company has unanimously (i) determined that this Agreement and the Transactions (including the Merger) are fair to and in the best interests of the Company and its stockholders, (ii) approved, adopted and declared advisable this Agreement and the Transactions (including the Merger), (iii) directed that the adoption of this Agreement be submitted to a vote at a meeting of the Company’s stockholders and (iv) recommended the adoption of this Agreement by the Company’s stockholders;

WHEREAS, the Board of Directors of Parent has (i) determined that this Agreement and the Transactions (including the issuance by Parent of its common stock, par value \$0.01 per share, in connection with the Merger (the “Parent Share Issuance” and, such stock, the “Parent Common Stock”)) are fair to and in the best interests of Parent and its stockholders, (ii) approved, adopted and declared advisable this Agreement and the Transactions (including the Parent Share Issuance), (iii) directed that the Parent Share Issuance be submitted to a vote at a meeting of Parent’s stockholders and (iv) recommended the approval of the Parent Share Issuance by Parent’s stockholders;

WHEREAS, the Board of Directors of Merger Sub has unanimously (i) approved, adopted and declared advisable this Agreement and the Transactions (including the Merger), (ii) directed that this Agreement be submitted to Parent for its approval and adoption in its capacity as the sole stockholder of Merger Sub and (iii) recommended adoption of this Agreement by Parent in its capacity as the sole stockholder of Merger Sub;

WHEREAS, it is intended that, for U.S. federal income tax purposes, the Merger shall qualify as a reorganization under Section 368(a) of the Internal Revenue Code of 1986 (the “Code”) and that this Agreement constitutes and is adopted as a “plan of reorganization” within the meaning of Treasury Regulations Sections 1.368-2(g) and 1.368-3(a); and

WHEREAS, the Company, Parent and Merger Sub desire to make certain representations, warranties, covenants and agreements specified in this Agreement in connection with the Transactions and to prescribe certain conditions to the Transactions.

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NOW, THEREFORE, in consideration of the foregoing and their respective representations, warranties, covenants and agreements set forth in this Agreement, and intending to be legally bound hereby, the Parties agree as follows:

ARTICLE I

DEFINED TERMS

Section 1.1 Certain Defined Terms. As used in this Agreement, the following terms have the meanings specified in this Section 1.1.

“Affiliate” means, with respect to any Person, at the time of determination, another Person that directly or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with, such first Person, where “control” means the possession, directly or indirectly, of the power to direct or cause the direction of the management policies of a Person, whether through the ownership of voting securities, by Contract, as trustee or executor or otherwise.

“Agreement” has the meaning set forth in the Preamble.

“Alternative Acquisition Agreement” has the meaning set forth in Section 7.5(a).

“Anti-Corruption Laws” has the meaning set forth in Section 4.23.

“Antitrust Division” has the meaning set forth in Section 7.4(a).

“Antitrust Laws” has the meaning set forth in Section 7.4(a).

“Beneficial Owner”, with respect to a Security, has the meaning ascribed to such term under Rule 13d-3(a) promulgated under the Exchange Act, and the terms “Beneficially Owned”, “Beneficially Owns” and “Beneficial Ownership” shall be construed accordingly.

“Board of Directors” means the board of directors of any specified Person.

“Book-Entry Shares” has the meaning set forth in Section 2.6(c).

“Business Day” means any day except a Saturday, a Sunday or other day on which the SEC or banks in New York, New York, are authorized or required by applicable Law to be closed.

“Certificate” has the meaning set forth in Section 2.6(c).

“Certificate of Merger” has the meaning set forth in Section 2.3.

“Change” has the meaning set forth in the definition of “Material Adverse Effect”.

“Change in Recommendation” has the meaning set forth in Section 7.2(a).

“Claim” has the meaning set forth in Section 7.8(a).

“Clayton Act” means the Clayton Antitrust Act of 1914.

“Closing” has the meaning set forth in Section 2.2.

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“Closing Date” has the meaning set forth in Section 2.2.

“Code” has the meaning set forth in the Recitals.

“Company” has the meaning set forth in the Preamble.

“Company Benefit Plans” has the meaning set forth in Section 4.16(a).

“Company Breach Termination Fee” has the meaning set forth in Section 9.3(b).

“Company Capital Stock” has the meaning set forth in Section 4.3(a).

“Company Common Stock” means the common stock, par value \$0.0013 per share, of the Company.

“Company Contracts” has the meaning set forth in Section 4.19(b).

“Company Disclosure Letter” has the meaning set forth in Article IV.

“Company Expense Reimbursement” has the meaning set forth in Section 9.4.

“Company Financial Advisor” has the meaning set forth in Section 4.24.

“Company Financial Statements” means the consolidated financial statements of the Company and the Company Subsidiaries included in the Company SEC Documents together, in the case of year-end statements, with reports thereon by Ernst & Young LLP, the independent auditors of the Company for the periods included therein, including in each case a consolidated statements of operations, comprehensive (loss) income, stockholders’ equity and cash flows, and accompanying notes.

“Company Identified Representations” means the first and third sentences of Section 4.1 (Organization), Section 4.2(b) (Subsidiaries), Section 4.3 (Capitalization), Section 4.4 (Authorization; Board Approval; Voting Requirements), Section 4.5 (Takeover Statute; No Restrictions on the Transactions), Section 4.24 (Opinion of Financial Advisor) and Section 4.25 (Brokers).

“Company Improvements” has the meaning set forth in Section 4.15.

“Company IT Assets” has the meaning set forth in Section 4.18(l).

“Company Leased Real Property” means all real property interests leased by the Company or any of the Company Subsidiaries.

“Company License Agreements” has the meaning set forth in Section 4.18(c).

“Company Owned Intellectual Property” has the meaning set forth in Section 4.18(a).

“Company Permits” has the meaning set forth in Section 4.13(a).

“Company Preferred Stock” has the meaning set forth in Section 4.3(a).

“Company Product” means each product or product candidate that is being researched, tested, developed, commercialized, manufactured, sold or distributed by or on behalf of the Company or any of the Company Subsidiaries, including, for the avoidance of doubt, RELISTOR® (methylxanthine bromide).

“Company Recommendation” has the meaning set forth in Section 4.4(b).

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“Company Record Date” has the meaning set forth in Section 7.2(a).

“Company Regulatory Agency” has the meaning set forth in Section 4.9(a)(i)(B).

“Company Regulatory Permits” has the meaning set forth in Section 4.9(a)(i)(B).

“Company SEC Documents” has the meaning set forth in Section 4.7(a).

“Company Stock Option” means an option to purchase shares of Company Common Stock issued under the Company Stock Plans.

“Company Stock Plan” means the 2005 Stock Incentive Plan and 2018 Performance Incentive Plan or any other equity or equity-based compensation plan of the Company.

“Company Stockholder Approval” has the meaning set forth in Section 4.4(c).

“Company Stockholders Meeting” has the meaning set forth in Section 7.2(a).

“Company Subsidiary” has the meaning set forth in Section 4.2(a).

“Company Termination Fee” has the meaning set forth in Section 9.3(a).

“Confidentiality Agreement” has the meaning set forth in Section 7.3(c).

“Constituent Documents” means with respect to any entity, its certificate or articles of association or incorporation, bylaws and any similar charter or other organizational documents of such entity.

“Continuing Employee” means each individual who is employed by the Company or any Company Subsidiary immediately before the Effective Time and who remains employed by the Surviving Corporation or its Subsidiaries immediately following the Effective Time.

“Contract” means any note, bond, mortgage, indenture, guarantee, license, franchise, Permit, agreement, a legally binding arrangement, contract, commitment, letter of intent, or other instrument or legally binding obligation (whether oral or written), and any amendments thereto.

“Copyrights” has the meaning set forth in the definition of “Intellectual Property”.

“Covered Product IP” has the meaning set forth in Section 4.18(a).

“Covered Rights” means, with respect to a Company Product, the Intellectual Property rights necessary or being used or held for use to research, develop, manufacture, have manufactured, supply, test, distribute, market, promote, license, offer for sale, sell, import, export, commercialize or otherwise exploit such Company Product in any jurisdiction.

“Credit Facility” means the certain Loan Agreement, dated as of November 4, 2016, by and between Healthcare Royalty Partners III, L.P., and MNTX Royalties Sub LLC, as amended, supplemented or otherwise modified prior to the date hereof.

“D & O Insurance” has the meaning set forth in Section 7.8(d).

“DGCL” has the meaning set forth in the Recitals.

“Effective Time” has the meaning set forth in Section 2.3.

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“EMA” has the meaning set forth in Section 4.9(e).

“Environmental Law” means any foreign, federal, state or local Law, treaty, Order, governmental restriction or any other requirement of Law (including common law) regulating or relating to the protection of occupational health and safety, natural resources, the environment or Hazardous Substances, including Laws relating to wetlands, pollution, contamination or the use, generation, management, handling, transport, treatment, disposal, storage, Release, threatened Release of, or exposure to, Hazardous Substances.

“Environmental Permit” means any Permit required pursuant to or necessary under applicable Environmental Laws.

“Equity Rights” means, with respect to any Person, any Security or obligation convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, or any options, warrants, calls, restricted stock, deferred stock awards, stock units, phantom awards, dividend equivalents, or commitments relating to, or any stock appreciation right or other instrument the value of which is determined in whole or in part by reference to the market price or value of, Securities or earnings of such Person, including, in the case of the Company, the Company Stock Options.

“ERISA” means the Employee Retirement Income Security Act of 1974.

“ERISA Affiliate” means any trade or business, whether or not incorporated, that together with the Company or any Company Subsidiary would be deemed a “single employer” within the meaning of Section 414 of the Code.

“Exchange Act” means the Securities Exchange Act of 1934.

“Exchange Agent” has the meaning set forth in Section 3.1(a).

“Exchange Fund” has the meaning set forth in Section 3.1(a).

“Exchange Ratio” has the meaning set forth in Section 2.6(b).

“FDA” has the meaning set forth in Section 4.9(a)(i)(A).

“FDCA” has the meaning set forth in Section 4.9(a)(i)(A).

“Five Percent Holder” means a Person that is a Beneficial Owner of five percent or more of the outstanding shares of Company Common Stock and has filed a Schedule 13D under the Exchange Act (or a member of a “group” (as defined in the Exchange Act) comprising such a Person).

“Foreign Competition Laws” has the meaning set forth in Section 4.6(b).

“Form S-4” has the meaning set forth in Section 4.6(b).

“FTC” means the Federal Trade Commission.

“GAAP” has the meaning set forth in Section 4.7(b).

“Governmental Entity” means any supranational, national, state, municipal or local government (including any subdivision, court, administrative agency or commission or other authority thereof) or any other supranational, governmental, intergovernmental, quasi-governmental authority, body, department or organization, including the SEC and European Union, or any regulatory body appointed by any of the foregoing, in each case, in any jurisdiction, including any Company Regulatory Agency or Parent Regulatory Agency.

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“Hazardous Substances” means all substances, materials or chemicals defined or regulated as “hazardous,” “toxic,” “radioactive,” “dangerous,” a “pollutant,” a “contaminant” or words of similar meaning under or pursuant to any applicable Environmental Law, including any constituents defined as “oil” or “pollutant or contaminant” in the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 300.5, and also including toxic mold, radon, petroleum, petroleum products, petroleum by-products, petroleum breakdown products, radioactive materials, asbestos-containing materials or polychlorinated biphenyls.

“Healthcare Laws” means the FDCA, Medicare (Title XVIII of the Social Security Act) and Medicaid (Title XIX of the Social Security Act), the Stark Anti-Self-Referral Law (42 U.S.C. §§ 1395nn), the Anti-Inducement Law (42 U.S.C. § 1320a-7a(a)(5)), the civil False Claims Act (31 U.S.C. §§ 3729 et seq.), the administrative False Claims Law (42 U.S.C. § 1320a-7b(a)), the Health Insurance Portability and Accountability Act of 1996 (42 U.S.C. § 1320d et seq.), as amended by the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. §§ 17921 et seq.), the exclusion laws (42 U.S.C. § 1320a-7), and any European Economic Area Member State Laws implementing the provisions of these directives, the Misleading and Comparative Advertising Directive (2006/114/EC), the Unfair Commercial Practices Directive (2005/29/EC), and any European Economic Area Member State Laws implementing the provisions of these directives, all regulations or guidance promulgated pursuant to such Laws, and any other foreign, federal, or state Law that regulates the design, development, testing, studying, manufacturing, processing, storing, importing or exporting, licensing, labeling or packaging, advertising, distributing or marketing of medical devices or pharmaceutical products, or that is related to patient or program charges, recordkeeping, claims process, documentation requirements, medical necessity, referrals, the hiring of employees or acquisition of services or supplies from those who have been excluded from government health care programs, quality, safety, privacy, security, licensure, accreditation or any other aspect of providing health care services.

“HSR Act” has the meaning set forth in Section 4.6(b).

“Indebtedness” means, with respect to any Person, without duplication, (a) all obligations of such Person and its Subsidiaries for borrowed money, or with respect to deposits or advances of any kind, (b) all obligations of such Person and its Subsidiaries evidenced by bonds, debentures, notes, mortgages or similar instruments or securities, (c) all lease obligations capitalized on the books and records of such Person or any of its Subsidiaries, (d) all obligations of such Person secured by a Lien on property or assets owned or acquired by such Person or any of its Subsidiaries, (e) all letters of credit or performance bonds issued for the account of such Person or any of its Subsidiaries (excluding (i) letters of credit issued for the benefit of suppliers to support accounts payable to suppliers incurred in the ordinary course of business, (ii) standby letters of credit relating to workers’ compensation insurance and surety bonds, (iii) surety bonds and customs bonds and (iv) clearing house guarantees), (f) all liabilities or obligations of such Person under any interest rate, currency or commodity derivatives or hedging transactions or similar instruments and (g) all guarantees and arrangements having the economic effect of a guarantee of such Person or any of its Subsidiaries of any Indebtedness of any other Person, other than clearing house guarantees; provided that, “Indebtedness” does not include (i) accounts payable to trade creditors, or accrued expenses, arising in the ordinary course of business or (ii) the endorsement of negotiable instruments for collection in the ordinary course of business consistent with past practice.

“Indemnified Persons” has the meaning set forth in Section 7.8(a).

“Intellectual Property” means all right, title and interest, whether protected, created or arising under the Laws of any jurisdiction throughout the world in, to, or arising out of: (a) trademarks, service marks, trade names, internet domain names, designs, logos, slogans, corporate names, design marks, industrial design, trade dress and other indicia of origin and general intangibles of like nature, together with all goodwill, registrations and applications related to the foregoing (collectively, “Trademarks”); (b) patents and patent applications, together with all reissues, continuations, continuations-in-part, revision, divisional, extensions and reexamination in connection therewith, and any counterparts thereof, and rights in and to inventions or processes and art (collectively, “Patents”); (c) copyrights and copyrightable works of authorship, masks works, design rights,

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moral rights, together with any applications for registration, registrations and renewals for any of the foregoing (collectively, “Copyrights”); (d) computer programs (including any and all software implementation of algorithms, models and methodologies, whether in source code or object code), databases and compilations (including any and all data and collections of data) and all documentation (including user manuals and training materials) relating to any of the foregoing (collectively, “Software”); (e) technology, trade secrets, invention disclosures, technical, research, clinical, regulatory and other data, imaging scans, and other confidential or proprietary information, know-how, proprietary processes, formulae, algorithms, models and methodologies (collectively, “Trade Secrets”); and (f) and other similar types of proprietary rights or other intellectual property.

“Intervening Event” has the meaning set forth in Section 7.5(f)(i).

“IRS” means the Internal Revenue Service.

“ISRA” means the New Jersey Industrial Site Recovery Act, N.J.S.A. 13:1K- 6 et seq., as amended, the rules, regulations, policies and guidance promulgated thereunder, and any Law that supplements or replaces any of the foregoing in the future.

“Joint Proxy Statement/Prospectus” has the meaning set forth in Section 7.1(a).

“knowledge” means, with respect to the Company, the knowledge of the individuals listed on Section 1.1(a) of the Company Disclosure Letter, and, with respect to Parent, the knowledge of the individuals listed on Section 1.1(a) of the Parent Disclosure Letter.

“Law” (and with the correlative meaning “Laws”) means any rule, regulation, statute, statutory instrument, Order, ordinance or code promulgated by any Governmental Entity, including any common law, state and federal law, securities law and law of any foreign jurisdictions.

“Leases” means all leases, subleases, licenses and occupancy agreements for real property, whether the Company Leased Real Property or the Parent Leased Real Property, together with all material amendments, modifications and guarantees of such agreements.

“Lien” means any charge, pledge, option, mortgage, deed of trust, hypothecation, security interest, lien, license to third parties, right of first refusal, encroachment, easement or defect or imperfection of title or any similar encumbrance of any kind or nature.

“Material Adverse Effect” means, with respect to the Company, a fact, circumstance, condition, development, change, event, occurrence or effect (a “Change”) that (a) has, or would reasonably be expected to have, a material adverse effect on the business, assets, liabilities, condition (financial or otherwise) or results of operations of the Company and the Company Subsidiaries, taken as a whole, or (b) would reasonably be expected to prevent, materially impair or materially delay the consummation of the Merger, other than, in the case of clause (a) above, (i) Changes directly arising out of the negotiation, public announcement, pendency or consummation of the Transactions (provided that this clause (i) shall not apply with respect to any representation or warranty that is expressly intended to address the consequences of the execution, delivery or performance of this Agreement or the consummation of the Transactions (including Section 4.6) or with respect to the condition to Closing contained in Section 8.2(a), to the extent it relates to such representations and warranties), (ii) Changes generally affecting the economy or the financial, credit or securities markets, (iii) political or regulatory Changes, (iv) Changes in any of the businesses and industries in which the Company and the Company Subsidiaries operate, (v) Changes in Law or in GAAP, (vi) acts of war (whether or not declared), cyberattacks, sabotage or terrorism, or any escalation or worsening of any such acts of war (whether or not declared), cyberattacks, sabotage or terrorism, (vii) pandemics, fires, earthquakes, floods, hurricanes, tornados, acts of God, any change resulting from weather conditions or other natural disasters, (viii) any decline, in and of itself, in the market price, or change in trading volume, of any Securities of the Company, (ix) any failure, in and of itself, by

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the Company or any of the Company Subsidiaries to meet any internal or public projections, forecasts, guidance, estimates, milestones, budgets or internal or published financial or operating predictions of revenue, earnings, cash flow or cash position, (x) any stockholder class action, derivative or similar litigation, suit, action or proceeding in respect of this Agreement (or the Transactions) or the Joint Proxy Statement/Prospectus (including breach of fiduciary duty and disclosure claims) and (xi) (A) any action taken by the Company or any of the Company Subsidiaries at the written request of Parent or Merger Sub or (B) compliance by the Company with the terms of, or the taking by the Company of any action required by, this Agreement, or the failure by the Company to take any action prohibited by this Agreement, (xii) any reduction in the credit rating of the Company or any of its Subsidiaries (provided that clauses (viii), (ix) and (xii)) shall not prevent a determination that any Change underlying such changes or failure has resulted in or contributed to a Material Adverse Effect, unless such Change is otherwise excepted by this definition), (xiii) any regulatory or clinical Changes relating to any Company Product (including (A) any regulatory actions, requests, recommendations or decisions of any Governmental Entity relating to any Company Product or any other regulatory or clinical development relating to any Company Product, and (B) any clinical trials, studies, tests or results or announcements thereof with respect to any Company Product), and (xiv) the research, development, testing, distribution, sale, supply, license, marketing, promotion, manufacturing or commercialization of any Company Product; provided, that any Change referred to in clauses (ii), (iii), (iv), (v), (vi) and (vii) may be taken into account in determining whether there has been, or would reasonably be expected to be, a Material Adverse Effect to the extent, and only to such extent, such Change has a disproportionate effect on the Company and the Company Subsidiaries, taken as a whole, relative to other similarly sized participants in the businesses, industries and geographic locations in which the Company and the Company Subsidiaries operate.

“Material Supplier” has the meaning set forth in Section 4.20.

“Merger” has the meaning set forth in the Recitals.

“Merger Consideration” has the meaning set forth in Section 2.6(b).

“Merger Sub” has the meaning set forth in the Preamble.

“OFAC” has the meaning set forth in Section 4.23.

“Open Source Software” means Software that is distributed as “free software,” “open source software” or under a “copyleft” agreement or is otherwise subject to the terms of any license which requires, as a condition on the use, copying, modification and/or distribution of such Software that such item, (a) be disclosed or distributed in source code or object code form, (b) be licensed for the purpose of making derivative works or (c) be redistributed at no or minimal charge.

“Order” means any charge, order, writ, injunction, judgment, decree, ruling, determination, directive, award or settlement, whether civil, criminal or administrative and whether formal or informal.

“Outside Date” has the meaning set forth in Section 9.1(b)(i).

“Parent” has the meaning set forth in the Preamble.

“Parent Alternative Acquisition Agreement” has the meaning set forth in Section 7.19(a).

“Parent Benefit Plans” has the meaning set forth in Section 5.16(a).

“Parent Capital Stock” has the meaning set forth in Section 5.3(a).

“Parent Change in Recommendation” has the meaning set forth in Section 7.2(b).

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“Parent Common Stock” has the meaning set forth in the Recitals.

“Parent Contract” has the meaning set forth in Section 5.19.

“Parent Disclosure Letter” has the meaning set forth in Article V.

“Parent Equity Awards” means Equity Rights granted under the Parent Stock Plans.

“Parent ERISA Affiliate” means any trade or business, whether or not incorporated, that together with Parent or any Parent Subsidiary would be deemed a “single employer” within the meaning of Section 414 of the Code.

“Parent Expenses” means the reasonable and documented out-of-pocket expenses incurred by Parent, Merger Sub and the other Parent Subsidiaries in connection with this Agreement and the Transactions not to exceed an amount equal to \$5,240,000.

“Parent Financial Advisor” has the meaning set forth in Section 5.24.

“Parent Financial Statements” means the consolidated financial statements of Parent and the Parent Subsidiaries included in the Parent SEC Documents together, in the case of year-end statements, with reports thereon by Deloitte & Touche LLP, the independent auditors of Parent for the periods included therein, including in each case a consolidated statements of operations, comprehensive income, stockholders’ equity (deficit) and cash flows, and accompanying notes.

“Parent Identified Representations” means the first and third sentences of Section 5.1 (Organization), Section 5.2(b) (Subsidiaries), Section 5.3 (Capitalization), Section 5.4 (Authorization; Board Approval; Voting Requirements), Section 5.5 (Takeover Statutes; Ownership of Company Common Stock), Section 5.24 (Opinion of Financial Advisor) and Section 5.25 (Brokers).

“Parent Improvements” has the meaning set forth in Section 5.15.

“Parent Intervening Event” has the meaning set forth in Section 7.19(f)(i).

“Parent IT Assets” has the meaning set forth in Section 5.18(k).

“Parent Leased Real Property” means all real property interests leased by Parent or any of the Parent Subsidiaries.

“Parent Material Adverse Effect” means, with respect to Parent, a Change that (a) has, or would reasonably be expected to have, a material adverse effect on the business, assets, liabilities, condition (financial or otherwise) or results of operations of Parent and the Parent Subsidiaries, taken as a whole, or (b) would reasonably be expected to prevent, materially impair or materially delay the consummation of the Merger, other than, in the case of clause (a) above, (i) Changes directly arising out of the negotiation, public announcement, pendency or consummation of the Transactions (provided that this clause (i) shall not apply with respect to any representation or warranty that is expressly intended to address the consequences of the execution, delivery or performance of this Agreement or the consummation of the Transactions (including Section 5.6) or with respect to the condition to Closing contained in Section 8.3(a), to the extent it relates to such representations and warranties), (ii) Changes generally affecting the economy or the financial, credit or securities markets, (iii) political or regulatory Changes, (iv) Changes in any of the businesses and industries in which Parent and the Parent Subsidiaries operate, (v) Changes in Law or in GAAP, (vi) acts of war (whether or not declared), cyberattacks, sabotage or terrorism, or any escalation or worsening of any such acts of war (whether or not declared), cyberattacks, sabotage or terrorism, (vii) pandemics, earthquakes, floods, hurricanes, tornados, acts of

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God, any change resulting from weather conditions or other natural disasters, (viii) any decline, in and of itself, in the market price, or change in trading volume, of any Securities of Parent, (ix) any failure, in and of itself, by Parent or any of the Parent Subsidiaries to meet any internal or public projections, forecasts, guidance, estimates, milestones, budgets or internal or published financial or operating predictions of revenue, earnings, cash flow or cash position, (x) any stockholder class action, derivative or similar litigation, suit, action or proceeding in respect of this Agreement (or the Transactions) or the Joint Proxy Statement/Prospectus (including breach of fiduciary duty and disclosure claims), (xi) (A) any action taken by Parent or any of the Parent Subsidiaries at the written request of the Company or (B) compliance by Parent or Merger Sub with the terms of, or the taking by Parent or Merger Sub of any action required by, this Agreement, or the failure by Parent or Merger Sub to take any action prohibited by this Agreement, (xii) any reduction in the credit rating of Parent or any of the Parent Subsidiaries (provided that clauses (viii), (ix) and (xii) shall not prevent a determination that any Change underlying such changes or failure has resulted in or contributed to a Parent Material Adverse Effect, unless such Change is otherwise excepted by this definition), (xiii) any regulatory or clinical Changes relating to any Parent Product (including (A) any regulatory actions, requests, recommendations or decisions of any Governmental Entity relating to any Parent Product or any other regulatory or clinical development relating to any Parent Product, and (B) any clinical trials, studies, tests or results or announcements thereof with respect to any Parent Product); and (xiv) the research, development, testing, distribution, sale, supply, license, marketing, promotion, manufacturing or commercialization of any Parent Product; provided, that any Change referred to in clauses (ii), (iii), (iv), (v), (vi) and (vii) may be taken into account in determining whether there has been, or would reasonably be expected to be, a Parent Material Adverse Effect to the extent, and only to such extent, such Change has a disproportionate effect on Parent and the Parent Subsidiaries, taken as a whole, relative to other similarly sized participants in the businesses, industries and geographic locations in which Parent and the Parent Subsidiaries operate.

“Parent Material Supplier” has the meaning set forth in Section 5.20.

“Parent Owned Intellectual Property” has the meaning set forth in Section 5.18(a).

“Parent Owned Properties” has the meaning set forth in Section 5.15.

“Parent Permits” has the meaning set forth in Section 5.13(a).

“Parent Preferred Stock” has the meaning set forth in Section 5.3(a).

“Parent Product” means each product or product candidate that is being researched, tested, developed, commercialized, manufactured, sold or distributed by or on behalf of Parent or any of the Parent Subsidiaries.

“Parent Recommendation” has the meaning set forth in Section 5.4(b).

“Parent Record Date” has the meaning set forth in Section 7.2(b).

“Parent Regulatory Agency” has the meaning set forth in Section 5.9(a)(i)(B).

“Parent Regulatory Permits” has the meaning set forth in Section 5.9(a)(i)(B).

“Parent SEC Documents” has the meaning set forth in Section 5.7(a).

“Parent Share Issuance” has the meaning set forth in the Recitals.

“Parent Stock Option” means any option to purchase Parent Common Stock.

“Parent Stock Plans” means, collectively, the 2015 Equity Incentive Plan, the 2013 Equity Incentive Plan, the 2008 Equity Incentive Plan and the 2017 Employee Stock Purchase Plan.

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“Parent Stockholder Approval” has the meaning set forth in Section 5.4(c).

“Parent Stockholders Meeting” has the meaning set forth in Section 7.2(b).

“Parent Subsidiary” has the meaning set forth in Section 5.2(a).

“Parent Superior Proposal” has the meaning set forth in Section 7.19(f)(ii).

“Parent Takeover Proposal” has the meaning set forth in Section 7.19(f)(iii).

“Parent Termination Fee” has the meaning set forth in Section 9.3(c).

“Party” or “Parties” has the meaning set forth in the Preamble.

“Patents” has the meaning set forth in the definition of “Intellectual Property”.

“Payoff Letter” has the meaning set forth in Section 7.20.

“Permit” means any permit, license, variance, exemption, certificate, consent, Order, approval, identification number or other authorization from any Governmental Entities and Self-Regulatory Organizations.

“Permitted Liens” means (a) any Liens for Taxes not yet delinquent or which are being contested in good faith by appropriate Proceedings and for which adequate reserves have been established in accordance with GAAP, (b) any carriers’, warehousemen’s, mechanics’, materialmen’s, repairmen’s or other similar Liens arising in the ordinary course of business securing amounts that are not past due or which are being contested in good faith by appropriate Proceedings, (c) any Liens that are disclosed on the Company Financial Statements (in the case of Liens applicable to the Company or any of the Company Subsidiaries) or the Parent Financial Statements (in the case of Liens applicable to Parent or any of the Parent Subsidiaries), or the notes thereto, or (d) any Liens consisting of zoning, building code or planning restrictions or regulations, easements, Permits, restrictive covenants, encroachments, rights-of-way and other restrictions or limitations on the use of real property or irregularities in, or exceptions to, title thereto which, individually or in the aggregate, do not materially detract from the value of, or impair the use of, such property, (e) any interests of landlords and licensors under any Lease, (f) any other imperfections of title or encumbrances, if any, which do not, individually or in the aggregate, materially impair the continued use and operation of any real property or tangible personal property of the owner thereof to which they relate as currently used or operated or (g) any Liens of record affecting real property which, individually or in the aggregate, do not materially detract from the value of, or impair the use of, such property.

“Person” means an individual, corporation, limited liability company, company, body corporate, partnership (whether or not having separate legal personality), association, trust, unincorporated organization, other entity or “group” (as defined in the Exchange Act).

“Personal Information” means information relating to an identified or identifiable natural person, and includes individually identifiable health information, personally identifiable information (e.g., name, address, telephone number, email address, financial account number, government-issued identifier and any other data used or intended to be used to identify, contact or precisely locate a person), biometric information and Internet Protocol address or other persistent identifier.

“PHSA” has the meaning set forth in Section 4.9(a)(i)(A).

“Proceeding” means any action, suit, claim, litigation, proceeding, arbitration, investigation or audit (whether at Law or in equity, before or by any Governmental Entity or Self-Regulatory Organization or before any arbitrator); provided that for purposes of Article IV and Article V, an investigation shall be a “Proceeding” only to the extent that the Company or Parent, as applicable, has knowledge of such investigation.

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“Product Registrations” has the meaning set forth in Section 4.9(b).

“Reference Time” has the meaning set forth in Section 4.3(a).

“Release” means any releasing, disposing, discharging, injecting, spilling, leaking, leaching, pumping, dumping, emitting, escaping, emptying, seeping, dispersal, migration, transporting, placing and the like, including the moving of any materials through, into or upon, any land, soil, surface water, groundwater or air, or otherwise entering into the indoor or outdoor environment.

“Representatives” has the meaning set forth in Section 7.3(a).

“Restrains” has the meaning set forth in Section 8.1(d).

“Sanctions” has the meaning set forth in Section 4.23.

“Sarbanes-Oxley Act” means the Sarbanes-Oxley Act of 2002.

“SEC” has the meaning set forth in Section 4.6(b).

“Secretary of State” has the meaning set forth in Section 2.3.

“Securities” means, with respect to any Person, any series of common stock or preferred stock, any ordinary shares or preferred shares and any other equity securities or capital stock of such Person, however described and whether voting or non-voting.

“Securities Act” means the Securities Act of 1933.

“Self-Regulatory Organization” means any U.S. or foreign commission, board, agency or body that is not a Governmental Entity but is charged with regulating its own members through the adoption and enforcement of financial, sales practice and other requirements for brokers, dealers, securities underwriting or trading, stock exchanges, commodity exchanges, commodity intermediaries, electronic communications networks, insurance companies or agents, investment companies or investment advisers.

“Sherman Act” means the Sherman Antitrust Act of 1890.

“Software” has the meaning set forth in the definition of “Intellectual Property”.

“Subsidiary”, when used with respect to any Person, means another Person, in which such first Person (a) owns, directly or indirectly, more than 50% of the outstanding voting securities, equity securities, profits interest or capital interest or (b) is entitled to elect at least a majority of the board of directors, board of managers or similar governing body.

“Superior Proposal” has the meaning set forth in Section 7.5(f)(ii).

“Surviving Corporation” has the meaning set forth in Section 2.1.

“Surviving Corporation Common Stock” has the meaning set forth in Section 2.6(a).

“Surviving Corporation Plans” has the meaning set forth in Section 7.6(b).

“Takeover Proposal” has the meaning set forth in Section 7.5(f)(iii).

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“Tax” (and with the correlative meaning “Taxes”) means (a) any U.S. federal, state, local or foreign net income, franchise, gross income, sales, use, value added, goods and services, *ad valorem*, turnover, real property, personal property, gross receipts, net proceeds, license, capital stock, payroll, employment, unemployment, disability, customs duties, unclaimed property, withholding, social security (or similar), excise, severance, transfer, alternative or add-on minimum, stamp, estimated, registration, fuel, occupation, premium, environmental, excess profits, windfall profits taxes or other tax of any kind and similar charges, fees, levies, imposts, duties, tariffs, licenses, escheat or other assessments, together with any interest and any penalties, additions to tax or additional amounts imposed with respect thereto by any Taxing Authority or Governmental Entity, (b) any liability for payment of amounts described in clause (a) whether as a result of transferee liability, of being a member of an affiliated, consolidated, combined or unitary group for any period, transferor liability, successor liability or otherwise through operation of Law and (c) any liability for the payment of amounts described in clauses (a) or (b) as a result of any tax sharing, tax indemnity or tax allocation agreement or any other express or implied agreement to indemnify any other Person.

“Tax Return” means any return, report, declaration, election, estimate, information statement, claim for refund or other document (including any related or supporting information and any amendment to any of the foregoing) filed or required to be filed with respect to Taxes.

“Taxing Authority” means, with respect to any Tax, the Governmental Entity that imposes such Tax and the agency (if any) charged with the collection of such Tax for such Governmental Entity.

“Technology” means, collectively, designs, formulae, algorithms, procedures, methods, techniques, ideas, know-how, results of research and development, Software, tools, data, inventions, apparatus, creations, improvements, works of authorship and other similar materials, all recordings, graphs, drawings, analyses, and any other embodiments of the foregoing, in any form whether or not specifically listed herein, and all related technology, that are used, incorporated or embodied in or displayed by any of the foregoing or used in the design, development, reproduction, sale, marketing, maintenance or modification of any of the foregoing.

“Trade Secrets” has the meaning set forth in the definition of “Intellectual Property”.

“Trademarks” has the meaning set forth in the definition of “Intellectual Property”.

“Transactions” has the meaning set forth in the Recitals.

“U.S.” means the United States of America.

“Willful Breach” means with respect to any breaches or failures to perform any of the covenants or other agreements contained in this Agreement, a material breach that is a consequence of an act or failure to act undertaken by the breaching party with actual knowledge or constructive knowledge (which shall be deemed to include knowledge of facts that a Person acting reasonably should have known, based on reasonable due inquiry) that such party’s act or failure to act would, or would reasonably be expected to, result in or constitute a breach of this Agreement. The term “Willfully Breached” shall be construed accordingly.

“Willful Breach Damages” has the meaning set forth in Section 9.2.

ARTICLE II

THE MERGER

Section 2.1 The Merger. Upon the terms and subject to the conditions set forth in this Agreement and in accordance with the DGCL, at the Effective Time, Merger Sub will merge with and into the Company, and the

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separate existence of Merger Sub shall cease. The Company shall continue as the surviving corporation and as a wholly-owned Subsidiary of Parent and shall continue to be governed by the Laws of the State of Delaware (as such, the “Surviving Corporation”). At the Effective Time, the effect of the Merger shall be as provided in this Agreement, the Certificate of Merger and the applicable provisions of the DGCL. Without limiting the generality of the foregoing, and subject thereto, at the Effective Time, all of the property, rights, privileges, powers and franchises of the Company and Merger Sub shall vest in the Surviving Corporation, and all debts, liabilities and duties of the Company and Merger Sub shall become the debts, liabilities and duties of the Surviving Corporation.

Section 2.2 Closing. The closing of the Merger (the “Closing”) shall take place at the offices of White & Case LLP, 1221 Avenue of the Americas, New York, New York 10020-1095, at 8:00 a.m., New York time, on the third Business Day following the satisfaction or (to the extent permitted by applicable Law) waiver by the party or parties entitled to the benefits of the conditions set forth in Article VIII (other than those conditions that by their nature are to be satisfied at the Closing, but subject to the satisfaction or (to the extent permitted by applicable Law) waiver of those conditions), or at such other place, time and date as shall be agreed in writing between the Company and Parent. The date on which the Closing occurs is referred to in this Agreement as the “Closing Date”.

Section 2.3 Effective Time. Subject to the provisions of this Agreement, on the Closing Date, Parent and the Company shall file a certificate of merger relating to the Merger as contemplated by the DGCL (the “Certificate of Merger”) with the Secretary of State of the State of Delaware (the “Secretary of State”), in such form as required by, and executed in accordance with, the DGCL. The Merger shall become effective at such time as the Certificate of Merger is duly filed with the Secretary of State on the Closing Date, or at such later time as Parent and the Company shall agree and specify in the Certificate of Merger. As used herein, the “Effective Time” shall mean the time at which the Merger shall become effective.

Section 2.4 Surviving Corporation Constituent Documents.

(a) At the Effective Time, the certificate of incorporation of the Company, as in effect immediately prior to the Effective Time, shall be amended and restated in its entirety to read as set forth on Exhibit A and as so amended and restated, shall be the certificate of incorporation of the Surviving Corporation until thereafter amended and/or restated as provided by applicable Law or such certificate of incorporation.

(b) At the Effective Time, the bylaws of the Company, as in effect immediately prior to the Effective Time, shall be amended and restated in their entirety to conform to the bylaws of Merger Sub (except that references therein to the name of Merger Sub shall be replaced by references to the name of the Surviving Corporation) and, as so amended and restated, shall be the bylaws of the Surviving Corporation until thereafter amended and/or restated as provided by applicable Law, the certificate of incorporation of the Surviving Corporation or such bylaws.

Section 2.5 Surviving Corporation Directors and Officers. From and after the Effective Time, the directors of Merger Sub immediately prior to the Effective Time shall be the directors of the Surviving Corporation and the officers of the Company immediately prior to the Effective Time shall be the officers of the Surviving Corporation, in each case, until their respective successors have been duly elected or appointed and qualified or until their earlier death, resignation or removal in accordance with the certificate of incorporation and bylaws of the Surviving Corporation.

Section 2.6 Effect on Capital Stock.

(a) At the Effective Time, by virtue of the Merger and without any further action on the part of Parent, Merger Sub, the Company or any stockholder of the Company, each share of common stock of Merger Sub issued and outstanding immediately prior to the Effective Time shall be converted into one fully paid and

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nonassessable share of common stock, par value \$0.001 per share, of the Surviving Corporation (the “Surviving Corporation Common Stock”) and shall constitute the only outstanding shares of Surviving Corporation Common Stock.

(b) At the Effective Time, by virtue of the Merger and without any further action on the part of Parent, Merger Sub, the Company or any stockholder of the Company, subject to the provisions of this Article II and Article III, each share of Company Common Stock issued and outstanding immediately prior to the Effective Time (other than shares of Company Common Stock owned by Parent, the Company or any of their respective wholly-owned Subsidiaries) shall, by virtue of this Agreement and without any action on the part of the holder thereof, be converted into and shall thereafter represent the right to receive 0.2502 shares of Parent Common Stock (the “Exchange Ratio” and, such shares, the “Merger Consideration”), without interest.

(c) From and after the Effective Time, none of the Company Common Stock converted into the Merger Consideration pursuant to this Article II shall remain outstanding and all such shares of Company Common Stock shall automatically be cancelled and retired and shall cease to exist, and each holder of a certificate previously representing any such Company Common Stock (a “Certificate”) or shares of Company Common Stock that are in non-certificated book entry form (“Book-Entry Shares”) shall thereafter cease to have any rights with respect thereto, except the right to receive (i) the Merger Consideration, (ii) any cash to be paid in lieu of any fractional share of Parent Common Stock in accordance with Section 3.5 (No Fractional Shares) and (iii) any dividends in accordance with Section 3.1(f) (Dividends), in each case, without interest.

(d) If at any time during the period between the date of this Agreement and the Effective Time, any change in the outstanding shares of Parent Common Stock or Company Common Stock shall occur by reason of any reclassification, recapitalization, stock split or combination, exchange or readjustment of shares, or any stock dividend thereon with a record date during such period, the Exchange Ratio, the Merger Consideration and any other similarly dependent items, as the case may be, shall be appropriately adjusted to provide the holders of Company Common Stock the same economic effect as contemplated by this Agreement prior to such event; provided, however, that this sentence shall not be construed to permit Parent or the Company to take any action with respect to its Securities that is prohibited by the terms of this Agreement.

(e) At the Effective Time, by virtue of the Merger and without any further action on the part of Parent, Merger Sub, the Company or any stockholder of the Company, all shares of Company Common Stock that are owned by Parent or the Company or any of their respective wholly-owned Subsidiaries shall be cancelled and retired and shall cease to exist and no consideration shall be delivered in exchange therefor.

Section 2.7 Treatment of the Company Stock Options. Each Company Stock Option outstanding and unexercised immediately before the Effective Time shall, as of the Effective Time, automatically and without any action on the part of the holder thereof, be assumed by Parent and converted into a Parent Stock Option to purchase (a) that number of shares of Parent Common Stock (rounded down to the nearest whole share) equal to the product obtained by multiplying (i) the total number of shares of Company Common Stock subject to such Company Stock Option immediately prior to the Effective Time by (ii) the Exchange Ratio, (b) at a per-share exercise price (rounded up to the nearest whole cent) equal to the quotient obtained by dividing (i) the exercise price per share of Company Common Stock at which such Company Stock Option was exercisable immediately prior to the Effective Time by (ii) the Exchange Ratio. Each such Company Stock Option shall continue to have, and shall be subject to, the same terms and conditions (including the applicable time-vesting and/or performance-vesting conditions and any provisions for accelerated vesting) as applied to the corresponding Company Stock Option immediately prior to the Effective Time. Prior to the Effective Time, the Board of Directors of the Company (or, if appropriate, any committee thereof administering the Company Stock Plan) and the Board of Directors of Parent (or if appropriate, any committee thereof administering the Parent Stock Plan) shall each pass resolutions to effect the foregoing provisions of this Section 2.7.

Section 2.8 Appraisal Rights. No right to fair value or appraisal, dissenters’ or similar rights shall be available to holders of Company Common Stock with respect to the Transactions.

Section 2.9 Parent Board At the Effective Time, the Board of Directors of Parent shall appoint one individual as mutually agreed upon in good faith by the Company and Parent (who must have been serving as a director of the Company Board as of the date hereof) and reasonably approved by the Nominating and Corporate Governance Committee of the Board of Directors of Parent to serve, effective as of the Effective Time, on the Board of Directors of Parent.

ARTICLE III

EXCHANGE OF SHARES

Section 3.1 Surrender and Payment.

(a) Prior to the Effective Time, Parent shall appoint an exchange agent reasonably acceptable to the Company (the “Exchange Agent”) for the purpose of exchanging shares of Company Common Stock for the Merger Consideration payable in respect thereof. As soon as reasonably practicable after the Effective Time, Parent will send, or will cause the Exchange Agent to send, to each holder of record of one or more Certificates as of the Effective Time, whose shares of Company Common Stock were converted into the right to receive the Merger Consideration pursuant to Section 2.6 (Effect on Capital Stock), a letter of transmittal (which shall specify that delivery shall be effected, and risk of loss and title to the Certificates shall pass, only upon proper delivery of the Certificates to the Exchange Agent) in such form as Parent may specify subject to the Company’s reasonable approval prior to the Effective Time, including instructions for use in effecting the surrender of Certificates (or effective affidavits of loss in lieu thereof) to the Exchange Agent in exchange for the Merger Consideration. At the Effective Time, Parent shall cause to be deposited with the Exchange Agent, for the benefit of the holders of shares of Company Common Stock, shares of Parent Common Stock (which shall be in non-certificated book-entry form) to be issued pursuant to Section 2.6 (Effect on Capital Stock) and an amount of cash in U.S. dollars sufficient to be paid pursuant to Section 3.5 (No Fractional Shares), payable to holders of the Book-Entry Shares or payable to the holders of Certificates upon due surrender of the Certificates (or effective affidavits of loss in lieu thereof), in each case, pursuant to the provisions of Article II and this Article III. Following the Effective Time, Parent agrees to make available to the Exchange Agent, from time to time as needed, cash in U.S. dollars sufficient to pay any dividends pursuant to Section 3.1(f) (Dividends). All cash and book-entry shares representing Parent Common Stock deposited with the Exchange Agent shall be referred to in this Agreement as the “Exchange Fund”. The Exchange Agent shall deliver the Merger Consideration (and any cash to be paid in lieu of any fractional share of Parent Common Stock in accordance with Section 3.5 (No Fractional Shares) or cash to be paid for dividends in accordance with Section 3.1(f) out of the Exchange Fund. The Exchange Fund shall not be used for any other purpose. The Exchange Agent shall invest any cash included in the Exchange Fund as directed by Parent. Any interest and other income resulting from such investments shall be the property of, and paid to, Parent.

(b) Each holder of one or more Certificate(s) representing shares of Company Common Stock that have been converted into the right to receive the Merger Consideration, upon surrender to the Exchange Agent of such Certificate(s) (or effective affidavit of loss in lieu thereof), together with a properly completed letter of transmittal, duly executed and completed in accordance with the instructions thereto, and such other documents as may reasonably be required by the Exchange Agent, will be entitled to receive in exchange therefor (i) the number of whole shares of Parent Common Stock (which shall be in non-certificated book-entry form unless a physical certificate is requested) representing, in the aggregate, the whole number of shares of Parent Common Stock, if any, that such holder has the right to receive pursuant to Section 2.6 (Effect on Capital Stock), (ii) if applicable, any cash to be paid in lieu of any fractional share of Parent Common Stock in accordance with Section 3.5 (No Fractional Shares) and (iii) if applicable, any dividends in accordance with Section 3.1(f) (Dividends), in each case, without interest (less any required Tax withholding). Until so surrendered, each such Certificate shall, after the Effective Time, represent for all purposes only the right to receive such (A) Merger Consideration, (B) cash in lieu of any fractional shares and (C) unpaid dividends. No holder of Book-Entry

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Shares shall be required to deliver a Certificate or completed letter of transmittal to the Exchange Agent to receive (1) the number of whole shares of Parent Common Stock (which shall be in non-certificated book-entry form unless a physical certificate is requested) representing, in the aggregate, the whole number of shares of Parent Common Stock, if any, that such holder has the right to receive pursuant to Section 2.6 (Effect on Capital Stock), (2) if applicable, any cash to be paid in lieu of any fractional share of Parent Common Stock in accordance with Section 3.5 (No Fractional Shares) and (3) if applicable, any dividends in accordance with Section 3.1(f) (Dividends), in each case, without interest (less any required Tax withholding). No interest shall be paid or accrued on any Merger Consideration, cash in lieu of fractional shares or unpaid dividends payable to holders of Certificates or Book-Entry Shares.

(c) With respect to Certificate(s), in the event of a transfer of ownership of any Certificate that is not registered in the transfer books of the Company as of the Effective Time, (i) any Merger Consideration, (ii) if applicable, any cash to be paid in lieu of any fractional share of Parent Common Stock in accordance with Section 3.5 (No Fractional Shares) and (iii) if applicable, any dividends in accordance with Section 3.1(f) (Dividends), in each case, may be issued or paid to such a transferee if the Certificate is presented to the Exchange Agent, properly endorsed or otherwise in proper form for transfer, accompanied by all documents required to evidence and effect such transfer and to evidence that any applicable stock transfer Taxes have been paid or are not applicable, in each case, in form and substance, reasonably satisfactory to the Exchange Agent. With respect to Book-Entry Shares, issuance or payment of (1) any Merger Consideration, (2) if applicable, any cash to be paid in lieu of any fractional share of Parent Common Stock in accordance with Section 3.5 (No Fractional Shares) and (3) if applicable, any dividends in accordance with Section 3.1(f) (Dividends), in each case, shall only be made to the Person in whose name such Book-Entry Shares are registered in the stock transfer books of the Company as of the Effective Time.

(d) From and after the Effective Time, there shall be no further registration of transfers of shares of Company Common Stock. From and after the Effective Time, the holders of Certificates representing shares of Company Common Stock outstanding immediately prior to the Effective Time shall cease to have any rights with respect to such shares of Company Common Stock except as otherwise provided in this Agreement or by applicable Law. If, after the Effective Time, Certificates are presented to the Exchange Agent or Parent, they shall be cancelled and exchanged for the consideration provided for, and in accordance with the procedures set forth, in Article II and this Article III.

(e) Any portion of the Exchange Fund that remains unclaimed by the holders of shares of Company Common Stock one year after the Effective Time shall be returned to Parent, and any such holder who has not exchanged his or her shares of Company Common Stock for the Merger Consideration in accordance with this Section 3.1 prior to that time shall thereafter look only to Parent for delivery of the Merger Consideration in respect of such holder's shares of Company Common Stock. Notwithstanding the foregoing, neither Parent, Merger Sub, nor the Company shall be liable to any holder of shares of Company Common Stock for any Merger Consideration, cash in lieu of fractional shares or any unpaid dividends delivered to any Governmental Entity pursuant to applicable abandoned property Laws. Any Merger Consideration, cash in lieu of fractional shares or any unpaid dividends remaining unclaimed by holders of shares of Company Common Stock immediately prior to such time as such amounts would otherwise escheat to or become property of any Governmental Entity shall, to the extent permitted by applicable Law, become the property of Parent free and clear of any claims or interest of any Person previously entitled thereto.

(f) No dividends with respect to shares of Parent Common Stock issued in the Merger shall be paid to the holder of any Certificates or Book-Entry Shares until such Certificates or Book-Entry Shares are surrendered or transferred, as applicable, as provided in this Section 3.1. Following such surrender, subject to the effect of escheat or abandoned property (in accordance with Section 3.1(e)), Tax or other applicable Law, shall be paid, without interest, to the record holder of the shares of Parent Common Stock issued in exchange therefor (i) at the time of such surrender, all dividends payable in respect of such shares of Parent Common Stock with a record date after the Effective Time and a payment date on or prior to the date of such surrender and not previously paid

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and (ii) at the appropriate payment date, the dividends payable with respect to such shares of Parent Common Stock with a record date after the Effective Time but with a payment date subsequent to such surrender. For purposes of dividends in respect of shares of Parent Common Stock, all shares of Parent Common Stock to be issued pursuant to the Merger shall be entitled to dividends pursuant to the immediately preceding sentence as if issued and outstanding as of the Effective Time.

Section 3.2 Lost, Stolen or Destroyed Certificates. If any Certificate shall have been lost, stolen or destroyed, upon the making of an affidavit of that fact by the Person claiming such Certificate to be lost, stolen or destroyed and, if required by Parent, the posting by such Person of a bond, in such reasonable amount as Parent may direct, as indemnity against any claim that may be made against it with respect to such Certificate, the Exchange Agent will issue in exchange for such lost, stolen or destroyed Certificate the Merger Consideration, any cash to be paid in lieu of any fractional share of Parent Common Stock in accordance with Section 3.5 (No Fractional Shares) and, if applicable, any dividends in accordance with Section 3.1(f) (Dividends) to be paid in respect of the shares of Company Common Stock represented by such Certificate as contemplated by this Article III.

Section 3.3 Withholding Rights. Each of Parent and the Surviving Corporation shall be entitled to deduct and withhold, or cause the Exchange Agent to deduct and withhold, from the consideration otherwise payable to any Person pursuant to this Agreement such amounts as it is required to deduct and withhold with respect to the making of such payment under the Code or any provision of state, local or foreign Tax Law. To the extent that amounts are so deducted or withheld and paid over to the applicable Governmental Entity or Taxing Authority, such deducted or withheld amounts shall be treated for all purposes of this Agreement as having been paid to the holder of shares of Company Common Stock in respect of which such deduction and withholding was made.

Section 3.4 Further Assurances. After the Effective Time, the officers and directors of the Surviving Corporation will be authorized to execute and deliver, in the name and on behalf of the Company and Merger Sub, any deeds, bills of sale, assignments or assurances and to take and do, in the name and on behalf of the Company or Merger Sub, as applicable, any other actions and things to vest, perfect or confirm of record or otherwise in the Surviving Corporation any and all right, title and interest in, to and under any of the rights, properties or assets acquired or to be acquired by the Surviving Corporation as a result of, or in connection with, the Merger

Section 3.5 No Fractional Shares. No certificates or scrips representing fractional shares of Parent Common Stock shall be issued in exchange for shares of Company Common Stock, no dividends of Parent shall relate to such fractional share interests and such fractional share interests shall not entitle the owner thereof to vote or to any rights of a stockholder of Parent. In lieu of such fractional share interests, Parent or the Exchange Agent shall pay to each holder of Company Common Stock an amount in cash equal to the product obtained by multiplying (a) the fraction of a share (after taking into account all shares of Company Common Stock held by such holder at the Effective Time and rounded to the nearest one thousandth when expressed in decimal form) of Parent Common Stock to which such holder would otherwise be entitled to receive pursuant to Section 2.6 (Effect on Capital Stock) by (b) the average of the volume weighted average price per share of Parent Common Stock on the Nasdaq Global Market (as reported in The Wall Street Journal or, if not reported therein, in another authoritative source mutually selected by Parent and the Company) on each of the 20 consecutive trading days ending with the second complete trading day prior to the Closing Date.

ARTICLE IV

REPRESENTATIONS AND WARRANTIES OF THE COMPANY

Except as (i) set forth in the corresponding Sections or Subsections of a disclosure letter delivered to Parent by the Company prior to, or concurrently with, the execution of this Agreement (the "Company Disclosure")

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Letter") (it being agreed that disclosure of any item in any Section or Subsection of the Company Disclosure Letter shall be deemed disclosure with respect to any other Section or Subsection to which the relevance of such item is reasonably apparent on its face) or (ii) other than with respect to the Company Identified Representations, disclosed in the Company SEC Documents filed with, or furnished to, the SEC pursuant to the Exchange Act since January 1, 2017 and at least two Business Days prior to the date of this Agreement, excluding any disclosures set forth in any Section entitled "Risk Factors" or "Forward-Looking Statements" or in any other Section to the extent they are forward-looking statements or cautionary, nonspecific, predictive or forward-looking in nature (it being agreed that any matter disclosed in any such Company SEC Document shall be deemed to be disclosed in a Section or Subsection of the Company Disclosure Letter only to the extent that it is reasonably apparent on the face of such disclosure in such Company SEC Document that such disclosure is applicable to such Section or Subsection of the Company Disclosure Letter), the Company represents and warrants to Parent and Merger Sub as follows:

Section 4.1 Organization. The Company is a corporation duly incorporated, validly existing and in good standing under the Laws of the State of Delaware and has all requisite corporate power and authority to own, lease and operate its properties and assets and to carry on its business as currently conducted. The Company is qualified or licensed to do business and is in good standing as a foreign corporation in each jurisdiction where the ownership, leasing or operation of its properties or assets or conduct of its business requires such qualification or license, except where any failure to be so qualified or licensed and in good standing has not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. The Company has made available to Parent true, correct and complete copies of its Constituent Documents, as amended and in effect on the date of this Agreement, and the Company is not in violation in any material respect of its Constituent Documents.

Section 4.2 Subsidiaries.

(a) Section 4.2(a) of the Company Disclosure Letter sets forth (i) each Subsidiary of the Company (individually, a "Company Subsidiary" and, collectively, the "Company Subsidiaries"), (ii) the number of authorized, issued and outstanding Securities of each Company Subsidiary and (iii) each Company Subsidiary's jurisdiction of incorporation or organization. Each Company Subsidiary is a corporation duly incorporated or a limited liability company, company limited by shares, partnership or other entity duly organized and is validly existing and, to the extent such concept or a similar concept exists in the relevant jurisdiction, in good standing under the Laws of the jurisdiction of its incorporation or organization, as the case may be, and has all requisite corporate or other power and authority, as the case may be, to own, lease and operate its properties and assets and to carry on its business as currently conducted, except where any failure to be in good standing has not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. Each Company Subsidiary is qualified or licensed to do business in each jurisdiction where the ownership, leasing or operation of its properties or assets or conduct of its business requires such qualification or license, except where any failures to be so qualified or licensed have not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. The Company has made available to Parent true, correct and complete copies of the Constituent Documents of each Company Subsidiary, as amended and in effect on the date of this Agreement, and no Company Subsidiary is in violation in any material respect of its Constituent Documents.

(b) The Company is, directly or indirectly, the record holder and Beneficial Owner of all of the outstanding Securities of each Company Subsidiary, free and clear of any Liens and free of any other limitation or restriction (including any limitation or restriction on the right to vote, sell, transfer or otherwise dispose of the Securities), except for such restrictions imposed by applicable Law. All of such Securities have been duly authorized, validly issued, fully paid and, where applicable, are nonassessable (and no such shares have been issued in violation of any preemptive or similar rights). Except for the Securities of the Company Subsidiaries, the Company does not own, directly or indirectly, any Securities or other ownership interests in any entity.

Section 4.3 Capitalization.

(a) As of the date of this Agreement, the authorized Securities of the Company consists of 160,000,000 shares of Company Common Stock, par value \$0.0013, and 20,000,000 shares of preferred stock, par value \$0.001 per share (the “Company Preferred Stock” and, together with the Company Common Stock, the “Company Capital Stock”). At the close of business on September 30, 2019 (the “Reference Time”): (i) 86,621,633 shares of Company Common Stock were issued and outstanding, (ii) no shares of Company Preferred Stock were issued and outstanding, (iii) 200,000 shares of Company Common Stock were held by the Company in its treasury, (iv) 7,254,451 shares of Company Common Stock were issuable upon the exercise of outstanding Company Stock Options and (v) 6,505,356 shares of Company Common Stock were reserved for issuance pursuant to the Company Stock Plans. Except as set forth in this Section 4.3(a), at the Reference Time, no Securities of the Company are issued, reserved for issuance or outstanding. From the Reference Time through the date hereof, there have been no issuances by the Company of Securities, other than the issuance of Company Common Stock upon the exercise of the Company Stock Options outstanding at the Reference Time and in accordance with their terms in effect at such time. All issued and outstanding Company Common Stock have been, and all shares of Company Common Stock that may be issued pursuant to the Company Stock Plans will be, when issued in accordance with the terms thereof, duly authorized, validly issued, fully paid and nonassessable and are subject to no preemptive or similar rights.

(b) (i) Section 4.3(b)(i) of the Company Disclosure Letter sets forth each Company Stock Plan and, as of the Reference Time, the aggregate number of shares of Company Common Stock relating to outstanding and available awards under each Company Stock Plan, and (ii) Section 4.3(b)(ii) of the Company Disclosure Letter sets forth a true and complete list, as of the Reference Time, with respect to each then-outstanding Company Stock Option, (A) the name of the Company Stock Option holder, (B) the number of shares of Company Common Stock underlying each Company Stock Option, (C) the date on which the Company Stock Option was granted, (D) the Company Stock Plan under which the Company Stock Option was granted, (E) the exercise price of each Company Stock Option, if applicable, and (F) the expiration date of each Company Stock Option, if applicable. The only awards outstanding under each Company Stock Plan are those identified on Section 4.3(b)(ii) of the Company Disclosure Letter. The Company has made available to Parent true and complete copies of each Company Stock Plan and form of agreement evidencing each Company Stock Option, and has also delivered any other stock option agreements evidencing a Company Stock Option to the extent there are material variations from the form of agreement, specifically identifying the Person(s) to whom such variant forms apply. Each Company Stock Option (1) was granted in compliance with all applicable Laws and all of the terms and conditions of the Company Stock Plans pursuant to which it was issued, (2) has an exercise price per share equal to or greater than the fair market value of a share of Company Common Stock at the close of business on the date of such grant, and (3) has a grant date not earlier than the date on which the Board of Directors of the Company (or compensation committee thereof) actually awarded such Company Stock Option.

(c) There are no preemptive or similar rights on the part of any holder of any class of Securities of the Company or any Company Subsidiary. Neither the Company nor any Company Subsidiary has outstanding any bonds, debentures, notes or other obligations the holders of which have the right to vote (or which are convertible into or exercisable for Securities having the right to vote) with the holders of any class of Securities of the Company or any Company Subsidiary on any matter submitted to such holders of Securities. Other than the Company Stock Options pursuant to the Company Stock Plans, there are no other outstanding Equity Rights with respect to Securities of the Company or any Company Subsidiary. There are no outstanding contractual obligations of the Company or any Company Subsidiary to repurchase, redeem or otherwise acquire any Securities of the Company or any Company Subsidiary. There are no proxies, voting trusts or other agreements or understandings to which the Company is a party or is bound with respect to the voting of the Securities of the Company.

Section 4.4 Authorization; Board Approval; Voting Requirements.

(a) The Company has all requisite corporate power and authority to execute and deliver this Agreement, to perform its obligations hereunder and, subject to the Company Stockholder Approval, to

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consummate the Transactions. The execution, delivery and performance of this Agreement and the consummation of the Transactions have been duly and validly authorized by all necessary corporate action, and no other corporate proceedings on the part of the Company are necessary for it to authorize this Agreement or to consummate the Transactions, except for, in any such case, the adoption of this Agreement by the Company Stockholder Approval. This Agreement has been duly and validly executed and delivered by the Company and, assuming due authorization, execution and delivery by the other Parties, is a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar Laws of general applicability relating to or affecting creditors' rights and to general equity principles.

(b) The Board of Directors of the Company, at a meeting duly called and held, has unanimously (i) determined that this Agreement and the Transactions (including the Merger) are fair to and in the best interests of the Company and its stockholders, (ii) approved, adopted and declared advisable this Agreement and the Transactions (including the Merger), (iii) directed that the adoption of this Agreement be submitted to a vote at a meeting of the Company's stockholders and (iv) subject to Section 7.5(d), recommended the adoption of this Agreement by the Company's stockholders (the "Company Recommendation").

(c) The affirmative vote at the Company Stockholders Meeting or any adjournment or postponement thereof of the holders of a majority of the outstanding shares of Company Common Stock in favor of the adoption of this Agreement (the "Company Stockholder Approval") is the only vote or consent of the holders of any class or series of Securities of the Company necessary in connection with the consummation of the Transactions.

Section 4.5 Takeover Statute; No Restrictions on the Transactions. Assuming the representations and warranties in Section 5.5(b) are true and correct, (a) no state "fair price," "moratorium," "control share acquisition" or similar anti-takeover statute is applicable to the Transactions and (b) the Company has taken all necessary action to render the restrictions on business combinations contained in Section 203 of the DGCL hereby inapplicable to this Agreement and the Transactions. The Company does not have in effect a "poison pill" or similar stockholder rights plan.

Section 4.6 No Violations; Consents and Approvals.

(a) The execution and delivery of this Agreement by the Company does not and the consummation by the Company and the Company Subsidiaries of the Transactions will not: (i) assuming receipt of the Company Stockholder Approval, conflict with any provisions of the Constituent Documents of the Company or any Company Subsidiary; (ii) assuming receipt of the Company Stockholder Approval, violate any Law or rules of any Self-Regulatory Organization (assuming compliance with the matters set forth in Section 4.6(b) (Consents and Approvals)); (iii) result, after the giving of notice, with lapse of time or otherwise, in any violation, default or loss of a benefit under, or permit the acceleration or termination of any obligation under or require any consent or notice under, any Contract to which the Company or any of the Company Subsidiaries is a party; (iv) result in the creation or imposition of any Lien upon any properties or assets of the Company or any Company Subsidiary; or (v) cause the suspension or revocation of any Company Permit, except, in the case of clauses (ii), (iii), (iv) and (v), as would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

(b) No clearance, consent, approval, Order, license or authorization of, or declaration, registration or filing with, or notice to, or Permit issued by, any Governmental Entity or Self-Regulatory Organization is required to be made or obtained by the Company or any Company Subsidiary in connection with the execution or delivery of this Agreement by the Company or the consummation by the Company and the Company Subsidiaries of the Transactions, except for: (i) compliance by the Company with the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (the "HSR Act"), the required filings or notifications under any foreign antitrust merger control Laws set forth on Section 4.6(b) of the Company Disclosure Letter (the "Foreign Competition Laws"); (ii) the filing of the Certificate of Merger with the Secretary of State in accordance with the

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DGCL; (iii) (A) the filing with the U.S. Securities and Exchange Commission (the “SEC”) of the Joint Proxy Statement/Prospectus in accordance with Regulation 14A promulgated under the Exchange Act, (B) the filing with the SEC, and the declaration of effectiveness under the Securities Act, of the registration statement on Form S-4 in connection with the Parent Share Issuance in which the Joint Proxy Statement/Prospectus will be included as a prospectus (the “Form S-4”) and (C) the filing with the SEC of such reports under, and such other compliance with the Exchange Act and the Securities Act as may be required in connection with, this Agreement and the Transactions; (iv) such consents, registrations, declarations, notices or filings as are required to be made or obtained under the securities or “blue sky” Laws of various states in connection with the Parent Share Issuance; (v) such filings with and approvals of the Nasdaq Global Market as are required to permit the consummation of the Merger and the listing of the shares of Parent Common Stock to be issued as Merger Consideration; and (vi) any such other clearance, consent, approval, Order, license, authorization, declaration, registration, filing, notice or Permit, the failure of which to make or obtain would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Section 4.7 SEC Reports; Company Financial Statements.

(a) The Company has timely filed or furnished all reports, schedules, forms, statements and other documents required to be filed or furnished by it with or to the SEC since January 1, 2017 (together with all exhibits, financial statements and schedules thereto, all information incorporated therein by reference and all documents filed with the SEC during such period by the Company on a voluntary basis, the “Company SEC Documents”). As of its filing (or furnishing) date or, if amended prior to the date of this Agreement, as of the date of the last such amendment, each Company SEC Document complied in all material respects with the applicable requirements of the Exchange Act and the Securities Act, as the case may be. As of its filing date or, if amended prior to the date of this Agreement, as of the date of the last such amendment, each Company SEC Document filed pursuant to the Exchange Act did not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. Each Company SEC Document that is a registration statement, as amended or supplemented, if applicable, filed pursuant to the Securities Act, as of the date such registration statement or amendment became effective prior to the date of this Agreement, did not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. None of the Company Subsidiaries are required to make any filings with the SEC.

(b) The Company Financial Statements, which have been prepared, in all material respects, from the books and records of the Company and the Company Subsidiaries, comply as to form in all material respects with the applicable accounting requirements and the published rules and regulations of the SEC with respect thereto and have been prepared in accordance with U.S. generally accepted accounting principles (“GAAP”) applied on a consistent basis throughout the periods presented, except as otherwise noted therein. The Company Financial Statements (including the related notes) present fairly in all material respects the consolidated financial position of the Company and the Company Subsidiaries as at the respective dates thereof and their consolidated results of operations and cash flows for the periods then ended (subject to normal and recurring year-end audit adjustments in the case of any unaudited interim financial statements).

(c) As of the date hereof, there are no material outstanding or unresolved written comments from the SEC with respect to the Company SEC Documents. As of the date hereof, none of the Company SEC Documents are, to the knowledge of the Company, the subject of ongoing SEC review.

(d) The audit committee of the Board of Directors of the Company has established “whistleblower” procedures that meet the requirements of Exchange Act Rule 10A-3, and has delivered or made available to Parent true, complete and correct copies of such procedures in effect as of the date of this Agreement. Since January 1, 2017, neither the Company nor any Company Subsidiary has received any “complaints” (within the meaning of Exchange Act Rule 10A-3) in respect of any accounting, internal accounting controls or auditing

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matters. To the knowledge of the Company, since January 1, 2017, no complaint seeking relief under Section 806 of the Sarbanes-Oxley Act has been filed with the United States Secretary of Labor and no employee of the Company or any Company Subsidiary has threatened to file any such complaint.

(e) To the extent required by the Exchange Act, the Company and the Company Subsidiaries have established and maintain disclosure controls and procedures (as defined in Rule 13a-15 under the Exchange Act) designed to ensure that material information relating to the Company, including the Company Subsidiaries, is made known to the Company's principal executive officer and its principal financial officer by others within those entities, including during the periods in which the periodic reports required under the Exchange Act are being prepared. Each of the principal executive officer of the Company and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company, as applicable) has made all certifications required by Rule 13a-14 or 15d-14 under the Exchange Act and Sections 302 and 906 of the Sarbanes-Oxley Act with respect to the Company SEC Documents, and the statements contained in such certifications are true and accurate in all material respects as of the date on which they were made. For purposes of this Section 4.7, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act. Since January 1, 2017, the Company has complied in all material respects with the provisions of the Sarbanes-Oxley Act.

(f) The Company maintains a system of "internal control over financial reporting" (as defined in Rule 13a-15(f) of the Exchange Act) designed to provide reasonable assurance regarding the reliability of the Company's financial reporting and the preparation of the Company's financial statements for external purposes in accordance with GAAP. The Company's principal executive officer and principal financial officer have disclosed, based on their most recent evaluation of such internal controls prior to the date of this Agreement, to the Company's auditors and the audit committee of the Board of Directors of the Company "(i) all significant deficiencies and material weaknesses" in the design or operation of internal controls which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in internal controls. The Company has made available to Parent prior to the date of this Agreement a true and complete (in all material respects) summary of any disclosure of the type described in the preceding sentence made by management to the Company's auditors and audit committee during the period beginning January 1, 2017 and ending as of the date hereof.

(g) Neither the Company nor any of the Company Subsidiaries is a party to, or has any commitment to become a party to, any off-balance sheet joint venture, off-balance sheet partnership or other "off-balance sheet arrangement" (as defined in Item 303(a) of Regulation S-K under the Exchange Act).

Section 4.8 Absence of Undisclosed Liabilities. The Company and the Company Subsidiaries do not have any liabilities, obligations or commitments, whether or not accrued, known or unknown, contingent or otherwise, that would be required by GAAP to be reflected on the consolidated balance sheet of the Company and the Company Subsidiaries, except for (i) liabilities, obligations and commitments that have not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, (ii) liabilities, obligations or commitments disclosed and provided for in the consolidated balance sheet (or the notes thereto) of the Company and the Company Subsidiaries as of June 30, 2019 and (iii) liabilities, obligations or commitments incurred in the ordinary course of business consistent with past practice since June 30, 2019 that are not material to the Company and the Company Subsidiaries, taken as a whole.

Section 4.9 Regulatory Matters.

(a) (i) Each of the Company and the Company Subsidiaries holds (A) all authorizations under the United States Food, Drug and Cosmetic Act of 1938 (the "FDCA"), the Public Health Service Act (the "PHSA"), and the regulations of the United States Food and Drug Administration (the "FDA") promulgated thereunder, and (B) authorizations of any applicable Governmental Entity that are concerned with the development, testing,

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packaging, labeling, storage, import, export, marketing, sale, pricing, use, handling and control, strength, purity, quality, safety, efficacy, reliability, distribution or manufacturing of any of the Company Products (any such Governmental Entity, a “Company Regulatory Agency”) necessary for the lawful operation of the businesses of the Company and each of the Company Subsidiaries as currently conducted (the “Company Regulatory Permits”); (ii) all such Company Regulatory Permits are valid and in full force and effect and will continue to be in full force and effect immediately following the Closing; and (iii) the Company and the Company Subsidiaries are in compliance in all material respects with the terms of all Company Regulatory Permits. There are no material Proceedings pending or, to the knowledge of the Company, threatened against the Company or any Company Subsidiary that could reasonably be expected to result in, the revocation, cancellation, suspension or any other adverse modification of any Company Regulatory Permit held by the Company or any Company Subsidiary.

(b) Section 4.9(b) of the Company Disclosure Letter sets forth, as of the date hereof, licenses or other registrations, marketing authorizations or other permits held by the Company issued by or pending with any Governmental Entity or other Company Regulatory Agency, as applicable, in connection with the clinical and other development, manufacture, marketing, promotion, distribution, sale or other use of any Company Product by or on behalf of the Company or any Company Subsidiary or any other Person in any jurisdiction (the “Product Registrations”). The Company and/or any Company Subsidiary are the sole and exclusive owners of the Product Registrations. All Company Products sold under the Product Registrations are manufactured, promoted, and marketed in accordance with the specifications and standards contained in such Product Registrations.

(c) Neither the Company nor any of the Company Subsidiaries is party to any corporate integrity agreements, monitoring agreements, consent Orders or similar agreements with or imposed by any Governmental Entity or Company Regulatory Agency.

(d) All pre-clinical and clinical investigations in respect of a Company Product conducted or sponsored by or on behalf of the Company or any of the Company Subsidiaries are being, and since January 1, 2017 have been, conducted in compliance in all material respects with (i) all applicable Laws administered or issued by any Company Regulatory Agency, including (A) FDA standards for the design, conduct, performance, monitoring, auditing, recording, analysis and reporting of clinical trials contained in Title 21 parts 50, 54, 56, 312, 314 and 320 of the Code of Federal Regulations, (B) applicable federal, state and provincial applicable Laws restricting the collection, use and disclosure of individually identifiable health information and Personal Information and (C) applicable Healthcare Laws, and (ii) experimental protocols, procedures and controls pursuant to Healthcare Laws and, where applicable, accepted professional and scientific standards. No pre-clinical or clinical testing conducted by or on behalf of the Company or any Company Subsidiary has been terminated or suspended due to safety or other non-business reasons, and, to the knowledge of the Company, there are no facts that could give rise to such a determination. No Company Regulatory Agency, clinical investigator, institutional review board or independent monitoring committee has provided notice that it has initiated or, to the knowledge of the Company, threatened to initiate any action to place a hold order on, or otherwise terminate, delay, suspend or modify any such ongoing testing, and, to the knowledge of the Company, there are no facts that would reasonably be expected to give rise to such a determination.

(e) Since January 1, 2017, neither the Company nor any of the Company Subsidiaries has received any written notice from the FDA or the European Medicines Agency (the “EMA”) or any foreign agency with jurisdiction over the development, marketing, labeling, sale, use handling and control, safety, efficacy, reliability or manufacturing of the Company Products which would reasonably be expected to lead to the denial, limitation, revocation or rescission of any of the Company Regulatory Permits or of any application for marketing approval currently pending before the FDA or such other Company Regulatory Agency.

(f) Since January 1, 2017, all reports, documents, claims, Permits and notices required to be filed, maintained or furnished to the FDA or any other Company Regulatory Agency by the Company and the Company Subsidiaries have been so filed, maintained or furnished. All such reports, documents, claims, Permits

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and notices were true and complete in all material respects on the date filed (or were corrected in or supplemented by a subsequent filing). Since January 1, 2017, neither the Company nor any of the Company Subsidiaries, nor, to the knowledge of the Company, any officer, employee, agent or distributor of the Company or any of the Company Subsidiaries, has made an untrue statement of a material fact or a fraudulent statement to the FDA or any other Company Regulatory Agency, failed to disclose a material fact required to be disclosed to the FDA or any other Company Regulatory Agency, or committed an act, made a statement or failed to make a statement, in each such case, related to the business of the Company or any of the Company Subsidiaries, that, at the time such disclosure was made, would reasonably be expected to provide a basis for the FDA to invoke its policy respecting “Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities” set forth in 56 Fed. Reg. 46191 (September 10, 1991) or for the FDA or any other Company Regulatory Agency to invoke any similar policy. Since January 1, 2017, (i) neither the Company nor any of the Company Subsidiaries, nor, to the knowledge of the Company, any officer, employee, agent or distributor of the Company or any of the Company Subsidiaries, has been debarred or convicted of any crime or engaged in any conduct for which debarment is mandated by 21 U.S.C. § 335a(a) or any similar applicable Law or authorized by 21 U.S.C. § 335a(b) or any similar applicable Law applicable in other jurisdictions in which any of the Company Products are sold or intended by the Company to be sold, and (ii) neither the Company nor any of the Company Subsidiaries, nor, to the knowledge of the Company, any officer, employee, agent or distributor of the Company or any of the Company Subsidiaries, has been excluded from participation in any federal health care program or convicted of any crime or engaged in any conduct for which such Person could be excluded from participating in any federal health care program under Section 1128 of the Social Security Act of 1935 or any similar applicable Law or program.

(g) As to each Company Product subject to the FDCA and the regulations of the FDA promulgated thereunder or any similar applicable Law in any foreign jurisdiction in which any of the Company Products are sold or intended by the Company or any of the Company Subsidiaries to be sold that is or has been developed, manufactured, tested, distributed or marketed by or on behalf of the Company or any of the Company Subsidiaries, each such Company Product is being or has been developed, manufactured, processed, stored, distributed, labeled, tested, sold or marketed in compliance in all material respects with all applicable Laws, including those relating to investigational use, marketing approval, current good manufacturing practices, packaging, labeling, advertising, record keeping, reporting and security (and further including the Physician Payment Sunshine Act (42 U.S.C. § 1320a-7h)). Neither the Company nor any of the Company Subsidiaries have received any written notice from any Governmental Entity (including any Company Regulatory Agency) threatening any, and there is no pending, Proceeding alleging any material violation applicable to any Company Product by the Company or any of the Company Subsidiaries of any applicable Law, including any Healthcare Law.

(h) Since January 1, 2017, neither the Company nor any of the Company Subsidiaries has voluntarily or involuntarily initiated, conducted or issued, or caused to be initiated, conducted or issued, any material recall, field corrections, market withdrawal or replacement, safety alert, warning, “dear doctor” letter, investigator notice or other notice or action to wholesalers, distributors, retailers, healthcare professionals or patients relating to an alleged lack of safety, efficacy or regulatory compliance of any Company Product. To the knowledge of the Company, there are no facts as of the date hereof which are reasonably likely to cause, and neither the Company nor any of the Company Subsidiaries has received any written notice from the FDA or any other Company Regulatory Agency since January 1, 2017 regarding: (i) the recall, market withdrawal or replacement of any Company Product sold or intended to be sold by the Company or the Company Subsidiaries; (ii) a material change in the marketing classification or a material change in the labeling of any such Company Products; (iii) a termination or suspension of the manufacturing, marketing, or distribution of such Company Products; or (iv) a material negative change in reimbursement status of a Company Product.

Section 4.10 Form S-4; Joint Proxy Statement/Prospectus. None of the information supplied or to be supplied by or on behalf of the Company or any Company Subsidiary for inclusion or incorporation by reference in (a) the Form S-4 will, at the time the Form S-4 is filed with the SEC or at any time it is supplemented or

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amended or at the time it becomes effective under the Securities Act, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading or (b) the Joint Proxy Statement/Prospectus will, on the date it is first mailed to each of Parent's stockholders and the Company's stockholders or at the time of each of the Parent Stockholders Meeting or the Company Stockholders Meeting, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they are made, not misleading. The Joint Proxy Statement/Prospectus will comply as to form in all material respects with the requirements of the Exchange Act, except that no representation is made by the Company with respect to statements made or incorporated by reference therein based on information supplied by Parent or Merger Sub for inclusion or incorporation by reference therein.

Section 4.11 Absence of Certain Changes. Since December 31, 2018 through the date of this Agreement, (a) except for the execution and performance of this Agreement and the discussions, negotiations and transactions related thereto, (i) the Company and the Company Subsidiaries have conducted in all material respects their respective businesses only in the ordinary course consistent with past practice, and (ii) there has not been any action taken by the Company or any Company Subsidiary that, if taken during the period from the date of this Agreement through the Effective Time, would require consent of Parent pursuant to clauses (b), (d), (e), (f), (i) or (l) of Section 6.1 (or solely with respect to the foregoing clauses, clause (g) of Section 6.1) (Covenants of the Company), and (b) there has not been any Change that has had or would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

Section 4.12 Litigation. There is no, and since January 1, 2017, there has been no, material Proceeding (excluding any Proceeding of the type contemplated by the second to last sentence of this Section 4.12) the pending or, to the knowledge of the Company, threatened against the Company or any Company Subsidiary, or their respective properties or rights or any of their respective current or former directors, officers, employees or contractors (in their capacities as such or relating to their services or relationship to the Company or the Company Subsidiaries). There is no, and since January 1, 2017 there has been no, material Order of any Governmental Entity, Self-Regulatory Organization or arbitrator outstanding against the Company or any Company Subsidiary. As of the date hereof, there is no Proceeding pending or, to the knowledge of the Company, threatened against the Company or any Company Subsidiary, which seeks to, challenge, restrain, enjoin or delay the consummation of the Merger, which seeks damages in connection therewith, and no injunction of any type has been entered or issued. There is no Proceeding pending in which the Company or any Company Subsidiary is a plaintiff.

Section 4.13 Compliance with Laws.

(a) Except as has not had or would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, each of the Company and the Company Subsidiaries holds all Permits which are necessary for the lawful conduct of their respective businesses or ownership of their respective assets and properties (the "Company Permits"). All Company Permits are in full force and effect and none of the Company Permits have been withdrawn, revoked, suspended or cancelled nor is any such withdrawal, revocation, suspension or cancellation pending or, to the knowledge of the Company, threatened. Except as has not had or would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, each of the Company and the Company Subsidiaries is, and since January 1, 2017 has been, in compliance with the terms of the Company Permits. Except as has not had or would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, there are no, and since January 1, 2017 have been no, Proceedings pending or, to the knowledge of the Company, threatened that seek the revocation, cancellation or adverse modification of any Company Permit.

(b) The businesses of the Company and each of the Company Subsidiaries are, and since January 1, 2017 have been, conducted in compliance in all material respects with all applicable Laws and the applicable

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rules of any Self-Regulatory Organization. Each of the Company and the Company Subsidiaries is in compliance in all material respects with its Constituent Documents.

Section 4.14 Taxes.

(a) The Company and each Company Subsidiary have (i) duly and timely filed (or there have been duly and timely filed on its behalf) with the appropriate Governmental Entities or Taxing Authorities all income Tax Returns and all other material Tax Returns required to be filed by it, and all notifications required to be filed by it in respect of the Company Stock Plans, which Tax Returns and notifications were true, correct and complete in all material respects, (ii) duly and timely paid in full or withheld, or established adequate reserves in accordance with GAAP for, all material Taxes that are due and payable by it (including estimated Tax payments), whether or not such Taxes were shown on any Tax Return or asserted by the relevant Governmental Entity or Taxing Authority, (iii) established reserves in accordance with GAAP that are adequate for the payment of all material Taxes not yet due and payable with respect to the results of operations of the Company and each Company Subsidiary through the date of this Agreement and (iv) complied in all material respects with all Laws applicable to the withholding and payment over of material Taxes and has timely withheld and paid over to, or, where amounts have not been so withheld, established an adequate reserve under GAAP for the payment to, the respective proper Governmental Entities or Taxing Authorities all material amounts required to be so withheld and paid over.

(b) There (i) is no material deficiency, Proceeding or request for information now pending, outstanding or threatened against or with respect to the Company or any Company Subsidiary in respect of any Taxes or Tax Returns and (ii) are no material requests for rulings or determinations in respect of any Taxes or Tax Returns pending between the Company or any Company Subsidiary and any authority responsible for such Taxes or Tax Returns.

(c) No deficiency for any Tax has been asserted or assessed by any Governmental Entity or Taxing Authority in writing against the Company or any Company Subsidiary (or, to the knowledge of the Company or any Company Subsidiary, has been threatened or proposed), except for deficiencies which have been satisfied by payment, settled or been withdrawn or which are being diligently contested in good faith by appropriate Proceedings and for which adequate reserves have been established in accordance with GAAP.

(d) There are no Tax sharing agreements, Tax indemnity agreements or other similar agreements with respect to or involving the Company or any Company Subsidiary.

(e) None of the Company or any Company Subsidiary has any liability for material Taxes as a result of having been a member of any affiliated group within the meaning of Section 1504(a) of the Code, or any similar affiliated or consolidated group for Tax purposes under state, local or foreign Law (other than a group the common parent of which is the Company), or has any liability for the Taxes of any Person (other than the Company or the Company Subsidiaries) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local or foreign Law), or as a transferee or successor, by Contract (other than Contracts entered into in the ordinary course of business, the primary purpose of which is not Tax) or otherwise.

(f) There are no material adjustments under Section 481 of the Code (or similar or analogous provision of state, local or foreign Law) for income Tax purposes applicable to or required to be made by the Company or any Company Subsidiary as a result of changes in methods of accounting or other events occurring on or before the date hereof.

(g) None of the Company or any Company Subsidiary will be required to include any material item of income in, or exclude any material item of deduction from, taxable income for any taxable period (or portion thereof) ending after the Closing Date as a result of any (i) change in method of accounting for a taxable period ending on or prior to the Closing Date, (ii) "closing agreement" as described in Section 7121 of the Code (or any

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corresponding or similar provision of state, local or foreign Tax Law) executed on or prior to the Closing Date, (iii) intercompany transactions or excess loss account described in Treasury Regulations under Section 1502 of the Code (or any corresponding or similar provision of state, local or foreign Tax Law), (iv) installment sale or open transaction disposition made on or prior to the Closing Date, (v) prepaid amount received on or prior to the Closing Date, (vi) cancellation or indebtedness income deferred pursuant to Section 108(i) of the Code, (vii) any inclusion under Section 951(a) or Section 951A of the Code attributable to (A) “subpart F income,” within the meaning of Section 952 of the Code, (B) direct or indirect holding of “United States property,” within the meaning of Section 956 of the Code, (C) “global intangible low-taxed income” as defined in Section 951A of the Code, in each case, determined as if the relevant taxable years ended on the Closing Date or (D) any inclusion under Section 965 of the Code, determined without regard to any election pursuant to Section 965(h) of the Code or (viii) otherwise as a result of a transaction or accounting method that accelerated an item of deduction into periods ending on or before the Closing Date or a transaction or accounting method that deferred an item of income into periods beginning after the Closing Date.

(h) There are no Liens for Taxes upon any property or assets of the Company or any Company Subsidiary, except for Permitted Liens.

(i) Neither the Company nor any Company Subsidiary has participated in a “reportable transaction” within the meaning of Treasury Regulations Section 1.6011-4(b).

(j) No material claim, other than claims defeated or withdrawn, has ever been made by an authority in a jurisdiction where the Company or any Company Subsidiary has not filed Tax Returns that it is or may be subject to taxation by that jurisdiction.

(k) Neither the Company nor any Company Subsidiary has waived any statute of limitations in respect of Taxes or agreed to any extension of time with regard to a Tax assessment or deficiency (other than pursuant to extensions of time to file Tax Returns obtained in the ordinary course).

(l) None of the Company or any Company Subsidiary has been a “controlled corporation” or a “distributing corporation” in any distribution occurring during the two-year period ending on the date hereof that was purported or intended to be governed by Section 355 of the Code (or any similar provision of state, local or foreign Law).

(m) The Company is not a foreign person within the meaning of Treasury Regulations Section 1.1445-2. The Company is not, and has not been at any time within the last five years, a “United States real property holding corporation” within the meaning of Section 897(c)(2) of the Code.

(n) There is no power of attorney given by or binding upon the Company or any Company Subsidiary with respect to Taxes for any period for which the statute of limitations (including any waivers or extensions) has not yet expired.

(o) None of the Indebtedness of the Company or any Company Subsidiary constitutes (i) “corporate acquisition indebtedness” (as defined in Section 279(b) of the Code) with respect to which any interest deductions may be disallowed under Section 279 of the Code or (ii) an “applicable high yield discount obligation” under Section 163(i) of the Code.

(p) None of the Company or any Company Subsidiary has taken or failed to take any action, or has knowledge of any facts or circumstances, that would prevent the Merger from constituting a Tax-free reorganization described in Section 368(a) and related provisions of the Code.

(q) No capital contributions have been made to the Company or any Company Subsidiary (either directly or indirectly) at any time as part of a plan a principal purpose of which was to increase any limitation relating to any such entity under Section 382 of the Code.

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Section 4.15 Real Property. The Company and each of the Company Subsidiaries do not own and have never owned any real property. Section 4.15 of the Company Disclosure Letter sets forth each Lease for the Company Leased Real Property, which constitutes all the real property leased by the Company and the Company Subsidiaries. The Company or a Company Subsidiary has a valid leasehold interest in each Company Leased Real Property free and clear of all Liens, except for Permitted Liens. Except as have not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, all buildings, structures, fixtures and improvements included within the Company Leased Real Property (the “Company Improvements”) are in good repair and operating condition, and are adequate and suitable for the purposes for which they are presently being used or held for use, and to the knowledge of the Company, there are no facts or conditions affecting any of the Company Improvements that, in the aggregate, would reasonably be expected to interfere with the current use, occupancy or operation thereof. Except as have not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, no portion of such Company Leased Real Property has suffered any damage by fire or other casualty loss which has not heretofore been completely repaired and restored to its original condition (ordinary wear and tear excepted).

Section 4.16 Employee Benefit Plans and Related Matters; ERISA.

(a) Section 4.16(a) of the Company Disclosure Letter contains a true and complete list of all Company Benefit Plans (other than immaterial fringe benefits, but in the case of form offer letters and equity award agreements, the Company Disclosure Letter shall list the form of such offer letter or equity award agreement and any letter or agreement that materially deviates from the terms of the form of such letter or agreement). “Company Benefit Plans” means, collectively, each employment, consulting, incentive, bonus, deferred compensation, incentive compensation, stock purchase, stock option, equity compensation, phantom equity, retention, change of control, severance or termination pay, vacation, sick, hospitalization or other medical, life or other insurance, supplemental unemployment benefits, profit-sharing, pension, retirement, supplemental retirement, profit-sharing, welfare, fringe or other benefit plan, program, trust, agreement or arrangement, and each other employee benefit plan, program, agreement or arrangement, or remuneration of any kind, whether or not in writing and whether or not funded, including, but not limited to, “employee benefit plans” within the meaning of Section 3(3) of ERISA, in each case that is currently maintained or contributed to or required to be contributed to by (i) the Company, (ii) any Company Subsidiary or (iii) any ERISA Affiliate, in any case for the benefit of any current or former employee, consultant, or director of the Company or any Company Subsidiary or pursuant to which the Company or any Company Subsidiary would have any liability (other than any plan, policy, program or arrangement mandated by applicable Law).

(b) Neither the Company nor any ERISA Affiliate maintains or contributes to or ever in the past six years maintained or was required to contribute to any plan or arrangement that is or was (i) subject to Section 412 of the Code or Section 302 of Title IV of ERISA, (ii) a multiple employer welfare arrangement within the meaning of Section 3(40) of ERISA or (iii) a multiemployer plan within the meaning of Section 3(37) or 4001(a)(3) of ERISA.

(c) Each Company Benefit Plan intended to be “qualified” within the meaning of Section 401(a) of the Code has received a favorable determination letter from the IRS as to its qualification and, to the knowledge of the Company, no event has occurred that could reasonably be expected to result in disqualification of such Company Benefit Plan.

(d) Each of the Company Benefit Plans has been operated and administered in all material respects in accordance with its terms and all applicable Laws, including ERISA and the Code. Except as would not be material, no individual who has performed services for the Company or any of the Company Subsidiaries has been improperly excluded from participation in any Company Benefit Plan.

(e) Except as would not be material, there are no pending or, to the knowledge of the Company, threatened claims in respect of or relating to any of the Company Benefit Plans, by any employee or beneficiary

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covered under any Company Benefit Plan or otherwise involving any Company Benefit Plan (other than routine claims for benefits). No audit or other Proceeding by a Governmental Entity is pending, or to the knowledge of the Company, threatened with respect to any Company Benefit Plan.

(f) Except as would not be material, neither the Company, any Company Subsidiary, any ERISA Affiliate, any Company Benefit Plan, any trust created thereunder, nor, to the knowledge of the Company, any trustee or administrator thereof has engaged in a transaction in connection that could reasonably be expected to give rise to a civil liability under either Section 409 of ERISA or Section 502(i) of ERISA or a Tax imposed pursuant to Section 4975 or 4976 of the Code.

(g) Neither the Company nor any Company Subsidiary has any legally binding plan or commitment to create any additional Company Benefit Plan or modify or change any existing Company Benefit Plan that would affect any employee or terminated employee of the Company or any Company Subsidiary.

(h) Each Company Benefit Plan can be terminated at any time in accordance with its terms.

(i) No Company Benefit Plan provides benefits, including death or medical benefits (whether or not insured), with respect to current or former employees or directors of the Company or any Company Subsidiary beyond their retirement or other termination of service, other than (i) coverage mandated solely by applicable Law, (ii) death benefits or retirement benefits under any "employee pension plan" (as defined in Section 3(2) of ERISA), (iii) deferred compensation benefits accrued as liabilities on the books of the Company or a Company Subsidiary or (iv) benefits the full costs of which are borne by the current or former employee or director or his or her beneficiary.

(j) Neither the execution and delivery of this Agreement, shareholder or other approval of this Agreement nor the consummation of the Transactions would, either alone or in combination with another event, including a termination of employment, to the extent such other event alone would not trigger such benefit, (i) entitle any employee, director, officer or independent contractor of the Company or any Company Subsidiaries to severance pay or any material increase in severance pay, (ii) accelerate the time of payment or vesting, or materially increase the amount of compensation due to any such employee, director, officer or independent contractor, (iii) directly or indirectly cause the Company to transfer or set aside any assets to fund any material benefits under any Company Benefit Plan, (iv) otherwise give rise to any material liability under any Company Benefit Plan, (v) limit or restrict the right to merge, materially amend, terminate or transfer the assets of any Company Benefit Plan on or following the Effective Time, (vi) require a "gross-up," indemnification for, or payment to any individual for any Taxes imposed under Section 409A or Section 4999 of the Code or any other Tax or (vii) result in a payment of any amount that could, individually or in combination with any other such payment, constitute an "excess parachute payment" as defined in Section 280G(b)(1).

Section 4.17 Employees; Labor Matters.

(a) Neither the Company nor any Company Subsidiary is, or since January 1, 2017 has been, party to, bound by, or in the process of negotiating, a collective bargaining agreement, other labor-related agreement or understanding or work rules with any labor union, labor organization or works council.

(b) None of the employees, consultants or workers of the Company or any Company Subsidiary are represented by a labor union, other labor organization or works council and, to the knowledge of the Company, (i) there is no effort currently being made or threatened by or on behalf of any labor union or labor organization to organize any employees, consultants or workers of the Company or any Company Subsidiary, and there are currently no activities related to the establishment of a works council representing employees, consultants or workers of the Company or any Company Subsidiary, (ii) no demand for recognition of any employees, consultants or workers of the Company or any Company Subsidiary has been made by or on behalf of any labor union or labor organization in the past three years and (iii) no petition has been filed, nor has any Proceeding

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been instituted by any employee, consultant or worker of the Company or any Company Subsidiary or group of employees, consultants or workers of the Company or any Company Subsidiary with any labor relations board or commission seeking recognition of a collective bargaining representative in the past three years.

(c) There is no pending or, to the knowledge of the Company, threatened (i) strike, lockout, work stoppage, slowdown, picketing or material labor dispute or other industrial action with respect to or involving any current or former employees, directors, consultants, workers or applicants for employment of the Company or any Company Subsidiary, and there has been no such action or event in the past three years or (ii) arbitration, or material grievance against the Company or any Company Subsidiary involving current or former employees, directors, consultants, workers, applicants for employment or representatives of employees, directors, consultants, workers or applicants for employment of the Company or any Company Subsidiary, and there has been no such action or event in the past three years.

(d) The Company and the Company Subsidiaries are, and have been for the past three years, in compliance in all material respects with all (i) Laws respecting employment and employment practices, terms and conditions of employment, labor relations, collective bargaining, disability, immigration, layoffs, health and safety, wages, hours and benefits, including, but not limited to, classification of employees, consultants, workers and independent contractors and classification of employees, consultants and workers for overtime eligibility, non-discrimination in employment, data protection, workers' compensation and the collection and payment of withholding and/or payroll Taxes and similar Taxes and (ii) obligations of the Company or any of the Company Subsidiaries under any employment agreement, agreement for the provision of personal services, severance agreement, collective bargaining agreement or any similar employment or labor-related agreement or understanding.

(e) There is no material charge, complaint or investigation, pending or, to the knowledge of the Company, threatened before any Governmental Entity alleging unlawful discrimination in employment practices, unfair labor practices, wage and hour violations, safety or health violations or any other unlawful employment practices by the Company or any of the Company Subsidiaries.

(f) No employee of the Company or any of the Company Subsidiaries has experienced an "employment loss," as defined by the federal Worker Adjustment and Retraining Notification Act or any similar applicable state, local or foreign Law, requiring notice to employees in the event of a closing or layoff, within the past 90 days.

Section 4.18 Intellectual Property.

(a) Section 4.18(a) of the Company Disclosure Letter sets forth, for all Intellectual Property, a complete and accurate list of all U.S. and foreign (i) Patents, (ii) registered Trademarks (including internet domain name registrations), pending applications for Trademarks and material unregistered Trademarks, (iii) Copyright registrations and applications and (iv) material Software, in each of the foregoing, which are owned by the Company or a Company Subsidiary, but excluding any items that are abandoned, cancelled, withdrawn, expired, or refused (collectively, the "Company Owned Intellectual Property"). Such list includes, where applicable, the record owner, jurisdiction and registration and/or application number, and date issued (or filed) for each of the foregoing. The Company has made available to Parent a true and complete list, as of the date of this Agreement, of all Patents and Trademarks, in each case, including Patents and Trademarks that are Company Owned Intellectual Property and Patents and Trademarks that are in licensed Intellectual Property that are material and necessary to any Company Product (including the exercise of any Covered Rights) (the "Covered Product IP").

(b) The Company has included correct and complete inventorship information for each Patent filing in the Company Owned Intellectual Property. All documents, recordations and certificates in connection with the registration or application for registration of the Company Owned Intellectual Property have been filed with the relevant patent, copyright, trademark or other authorities in any relevant jurisdictions, as the case may be, for the

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purposes of prosecuting, maintaining and perfecting such Company Owned Intellectual Property. The Company and all Company Subsidiaries have complied with all applicable notice and marking requirements for, and none of the labels or other packaging or marketing materials with respect to the Company Products contain any false, inaccurate or incorrect marking for, the Company Owned Intellectual Property. No inequitable conduct, nor any on-sale bar or public use or improper disclosure activity or violation, has been engaged in or committed with respect to any Company Owned Intellectual Property or in the prosecution of any Patent in any Company Owned Intellectual Property, and no material information was withheld from any entity requiring disclosure of such information during prosecution of such Patents. All filings, payments and other actions required to be made or taken to maintain each item of registered Company Owned Intellectual Property in full force and effect have been made by the applicable deadline under the applicable Law.

(c) Section 4.18(c) of the Company Disclosure Letter sets forth a complete and accurate list of all material agreements (i) granting or obtaining a license to any Intellectual Property to which the Company or any Company Subsidiary is a party or otherwise bound, (ii) restricting the Company or any Company Subsidiary's right to use or register any Company Owned Intellectual Property, or (iii) to which the Company or a Company Subsidiary is a party permitting or agreeing to permit any other Person to use, enforce or register any material Company Owned Intellectual Property, including license agreements, coexistence agreements and covenants not to sue, but excluding in the case of clauses (i) and (iii) above, (A) nondisclosure agreements, (B) non-exclusive license agreements entered into in the ordinary course of business, (C) Contracts with current and former employees, consultants and independent contractors of the Company or a Company Subsidiary that do not materially differ in substance from the Company's or such Company Subsidiary's standard form of agreement and (D) Contracts under which the only Intellectual Property granted, licensed or provided by the Company or a Company Subsidiary is to contractors or vendors, in the ordinary course of business and on a non-exclusive basis, to enable such contractors or vendors to provide services for the Company or a Company Subsidiary (the agreements required to be listed in Section 4.18(c) of the Company Disclosure Letter, collectively, the "Company License Agreements"). No material royalties, honoraria or other fees are payable to any third parties for the use of or right to use any Company Owned Intellectual Property except pursuant to the Company License Agreements. Neither the execution and delivery of this Agreement by the Company nor consummation by the Company of the Transactions will result in any limitation on the Company's and/or a Company Subsidiary's right, title or interest (to the extent applicable) in any Company Owned Intellectual Property, Covered Product IP or Company License Agreements.

(d) The Company or a Company Subsidiary is the sole and exclusive owner of, free and clear of all Liens (except Permitted Liens) and further subject to the Intellectual Property or other rights of any third party under any Contract to which the Company or a Company Subsidiary is a party, all of the Company Owned Intellectual Property that is material to their respective businesses. The Company Owned Intellectual Property that is subject to a registration or application with a Governmental Entity is valid, enforceable (excluding pending applications), subsisting, in full force and effect, and has not been cancelled, expired or abandoned. The Company or a Company Subsidiary has a valid right and enforceable right to use the Covered Product IP that is not Company Owned Intellectual Property, and, to the knowledge of the Company, the Covered Product IP is valid and enforceable. The Covered Product IP together with any other Intellectual Property that the Company or any Company Subsidiary is otherwise permitted to use (including by way of release, covenant not to sue or immunity from suit) constitutes all of the Intellectual Property necessary to, or used or held for use in the conduct of the respective businesses of the Company and the Company Subsidiaries as currently conducted and as currently planned to be conducted prior to the Closing (including as may be necessary to exercise the Covered Rights with respect to any Company Product).

(e) Within the past six years, there have been no asserted, pending, or to the knowledge of the Company, threatened (including in the form of offers or invitations to obtain a license) Proceedings alleging that the activities or conduct of the business of the Company or a Company Subsidiary infringe upon, misappropriate, or otherwise violate or constitute the unauthorized use of the Intellectual Property of any third party or challenging the Company's or a Company Subsidiary's ownership, use, validity, enforceability or registrability

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of any Company Owned Intellectual Property (but excluding routine prosecution Proceedings before the United States Patent and Trademark Office or equivalent foreign Governmental Entities).

(f) The conduct of the business of the Company and the Company Subsidiaries by the Company as conducted in the past six years and as currently conducted does not infringe upon (either directly or indirectly, such as through contributory infringement or inducement to infringe), misappropriate or otherwise violate, and has not infringed upon (directly or indirectly), misappropriated or otherwise violated, any Intellectual Property of any other Person (or will, to the knowledge of the Company, infringe, misappropriate or otherwise violate the Intellectual Property rights of any other Person through the exercise prior to or after the Closing of any Covered Rights with respect to any Company Product).

(g) To the knowledge of the Company, no third party is misappropriating, infringing, diluting or violating any Company Owned Intellectual Property and no claims, suits, arbitrations or other adversarial Proceedings have been brought or threatened against any third party with respect thereto by the Company or a Company Subsidiary.

(h) The Company and each Company Subsidiary have taken commercially reasonable measures designed to protect and maintain the secrecy, confidentiality and value of the material Trade Secrets owned or held by the Company and the Company Subsidiaries, including requiring its past and present employees, contractors, consultants and other parties having access thereto to execute valid, written nondisclosure agreements requiring such individuals to hold all such Trade Secrets and other confidential information in confidence both during and after their employment and/or engagement. To the knowledge of the Company, no such material Trade Secrets or confidential information have been disclosed or authorized to be disclosed to any third party other than pursuant to a nondisclosure agreement. To the knowledge of the Company, no third party to any nondisclosure agreement with the Company or a Company Subsidiary is in breach, violation or default thereof.

(i) Each current and former employee, consultant, contractor and/or individual that has delivered, developed, contributed to, modified or improved material Intellectual Property owned or purported to be owned by the Company or a Company Subsidiary has executed an agreement assigning to the Company or such Company Subsidiary all of such employee's, consultant's, contractor's and/or individual's rights in such development, contribution, modification or improvement. To the knowledge of the Company, it will not be necessary to use any inventions owned by any of its employees, contractors or consultants (or Persons it currently intends to hire) made prior to their employment and/or engagement by the Company.

(j) With respect to any material Software that is owned by the Company or a Company Subsidiary, such Software was either developed (i) by employees of the Company or such Company Subsidiary within the scope of their employment or (ii) by independent contractors who have assigned their rights in such Software to the Company or such Company Subsidiary pursuant to written agreements.

(k) No Open Source Software (i) has been modified by the Company or any Company Subsidiary, (ii) has been embedded in or otherwise combined by the Company or any Company Subsidiary with any other Software or (iii) has been distributed by the Company or any Company Subsidiary to any third party either independently or as part of a Company Product, in each case, in a manner that would condition the license governing such Open Source Software on the Company's or a Company Subsidiary's (A) disclosing or distributing any Software owned by the Company or a Company Subsidiary in source code form, (B) licensing any Software owned by the Company or a Company Subsidiary for the purpose of making derivative works or (C) redistributing any Software owned by the Company or a Company Subsidiary at no or minimal charge. No current or former director, officer or employee of the Company (or any of its predecessors in interest) will, after giving effect to the Transactions, own or retain any rights to use any of the Company Owned Intellectual Property.

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(l) All Software, Technology, systems, servers, computers, hardware, firmware, middleware, networks, data communications lines, routers, hubs, switches and other information technology equipment owned by the Company or used in the operation of the business of the Company and Company Subsidiaries as currently conducted (collectively, the “Company IT Assets”) are reasonably adequate for, and operate and perform in accordance with their documentation and functional specifications and otherwise as required in connection with, the operation of such business. The Company and Company Subsidiaries have implemented commercially reasonable backup, security and disaster recovery procedures and, to the knowledge of the Company, during the three years prior to the date of this Agreement, no Person has gained unauthorized access to any Company IT Assets and there has been no material failure of any Company IT Asset.

(m) The Company and each Company Subsidiary have established and maintained commercially reasonable privacy policies and have been in compliance with (i) such policies and (ii) all (A) Contracts and (B) applicable federal, state, local and foreign Laws relating to privacy, data protection, data security, export, and the collection, use, disclosure, retention, security and processing of Personal Information gathered, used, processed, held for use or accessed in the course of the operations of its business. No claims or investigations have been asserted or, to the knowledge of the Company, threatened against the Company or any Company Subsidiary alleging a violation of any Law or Contract relating to a Person’s privacy, Personal Information or data rights. The consummation of the Transactions will not breach or otherwise cause any violation of any Contract or policy of the Company or any Company Subsidiary related to the privacy or data security of the Personal Information gathered, used, held for use or accessed on, or on behalf of, the Company or any Company Subsidiary in the conduct of their respective businesses. The Company and each Company Subsidiary have not notified in writing, or been required by applicable Law or Contract to notify in writing, any Person of any privacy or technology security incidents.

(n) The Company and each Company Subsidiary have implemented commercially reasonable security regarding (i) the collection, use, disclosure, retention, processing, transfer, confidentiality, integrity and availability of Personal Information collected, owned, controlled or held by the Company or any Company Subsidiary, and (ii) the integrity and availability of any information or operational technology systems, or Software applications used by or on behalf of the Company or any Company Subsidiary. There has not been any loss, damage, or unauthorized disclosure, use of, or access to, any Personal Information or Intellectual Property in the possession, custody or control of the Company or any Company Subsidiary, and there has been no security incident that has compromised the integrity or availability of the information technology system, operational technology system or Software applications used, owned or operated by the Company or any Company Subsidiary.

Section 4.19 Contracts.

(a) As of the date hereof, neither the Company nor any Company Subsidiary is a party to or bound by (excluding in each case any Company Benefit Plans):

(i) any Contract relating to Indebtedness (whether incurred, assumed, guaranteed or secured by any asset) of the Company or any of the Company Subsidiaries in excess of \$5,000,000;

(ii) any Contract under which the Company has advanced or loaned any Person any amounts, other than (A) trade payables, accruals, current accounts and similar unpaid customer invoice obligations incurred in the ordinary course of business not in excess of \$1,000,000 in the aggregate or (B) advances or loans to any employee of the Company or any Company Subsidiary and advances in connection with expenses incurred by any employee, consultant or agent of the Company or any Company Subsidiary in the ordinary course of business not to exceed \$25,000 in the aggregate;

(iii) any joint venture, partnership, limited liability company, shareholder or other similar Contracts relating to the formation, creation, operation, management or control of any partnership, profit-sharing or joint venture of the Company or any of the Company Subsidiaries;

(iv) any Contract relating to any profit-sharing, collaboration, co-development, co-marketing, co-promotion, co-packaging, co-commercialization, research, development or similar arrangement;

(v) any Contract or series of related Contracts providing for the acquisition or disposition of any business or real property, whether by merger, sale of stock, sale of assets or otherwise (or any Contract providing for an option, right of first refusal or offer or similar rights with respect to any of the foregoing), that (A) was entered into since December 31, 2017 and involved, the payment of consideration in excess of \$1,000,000 in the aggregate or (B) that contains (or would contain, in the case of an option, right of first refusal or offer or similar rights) (x) obligations (including “earnout” or other contingent payment obligations) that would reasonably be expected to result in the receipt or making of future payments or the issuance of any Securities of the Company or any of the Company Subsidiaries in excess of \$1,000,000 or (y) ongoing indemnification obligations with respect to any material covenants that remain unperformed or with respect to material representations (excluding title, authority, organization and other fundamental representations), the survival period as to which has not expired;

(vi) any Contracts or other transactions with any (A) executive officer or director of the Company (B) record holder or, to the knowledge of the Company, Beneficial Owner of five percent or more of the voting securities of the Company, or (C) “affiliate” (as such term is defined in Rule 12b-2 promulgated under the Exchange Act) or “associates” (or members of any of their “immediate family”) (as such terms are respectively defined in Rule 12b-2 and Rule 16a-1 of the Exchange Act) of any such executive officer, director or Beneficial Owner;

(vii) (A) any Contract containing provisions providing for exclusivity, nonsolicitation or “most-favored-nations” pricing, (B) any Contract containing covenants of the Company or any Company Subsidiary not to (or otherwise restricting or limiting the ability of the Company or any Company Subsidiary to) compete in any line of business or geographic or therapeutic area, including any covenant not to compete with respect to the provision of services or the development, testing, manufacture, marketing, distribution, sale or maintenance of the Company Products, or (C) any Contract that contains any other provisions restricting or purporting to restrict the ability of the Company or any of the Company Subsidiaries to sell, market, distribute, promote, manufacture, develop, commercialize, or test or research any Company Product, directly or indirectly through third parties in any material respect, excluding, in each case, any Lease;

(viii) any Contract, including any manufacturing, supply or distribution agreement, that requires by its terms or is reasonably likely to require the payment or delivery of cash or other consideration by or to the Company or any of the Company Subsidiaries in an amount having an expected value in excess of \$5,000,000 in the fiscal year ending December 31, 2018 or any fiscal year thereafter and which cannot be terminated by the Company or any Company Subsidiary on less than 60 days’ notice without material payment or penalty;

(ix) any Contract under which the Company or any Company Subsidiary has directly or indirectly guaranteed an amount that is material to the Company and the Company Subsidiaries, taken as a whole (other than endorsements for the purpose of collection in a commercially reasonable manner consistent with industry practice);

(x) any Contract that would be required to be filed as an exhibit to any Company SEC Document (as described in Items 601(b)(4) and 601(b)(10) of Regulation S-K under the Securities Act) that has not been filed as an exhibit to or incorporated by reference in the Company SEC Documents filed prior to the date of this Agreement;

(xi) any Contract that involves expenditures or receipts of the Company or any Company Subsidiary in excess of \$5,000,000 in the aggregate per year;

(xii) any Contract with any Governmental Entity involving or that would reasonably be expected to involve payments to or from any Governmental Entity in an amount having a value or an

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expected value in excess of \$5,000,000 in the fiscal year ending December 31, 2019 or any fiscal year thereafter;

(xiii) any Company License Agreement;

(xiv) any Contract with any Person (A) pursuant to which the Company or any of the Company Subsidiaries may be required to pay milestones, royalties or other contingent payments based on any research, testing, development, regulatory filings or approval, sale, distribution, commercial manufacture or other similar occurrences, developments, activities or events, in each case, with respect to the Company Products, or (B) under which the Company or any of the Company Subsidiaries grants to any Person any right of first refusal, right of first offer, right of first negotiation, option to purchase, option to license or any other similar rights with respect to any Company Product or any Intellectual Property, in each case, which payments are in an amount having an expected value in excess of \$5,000,000 in the fiscal year ending December 31, 2018 or any fiscal year thereafter;

(xv) any collective bargaining agreements or other Contracts with any labor organization, labor union or other employee representative with respect to employees of the Company or any of the Company Subsidiaries;

(xvi) any Contract involving the settlement or compromise of any pending or threatened Proceeding (or series of related Proceedings), which (A) involves payments by the Company or any of the Company Subsidiaries after the date hereof in excess of \$2,000,000 or (B) imposes any materially burdensome monitoring or reporting obligations to any other Person outside the ordinary course of business or any other material restrictions on the Company or any Company Subsidiary; or

(xvii) (A) any Contract that primarily relates to research, pre-clinical, clinical or other development of any Company Product or (B) any Contract that primarily relates to distribution, marketing, supply, collaboration, manufacturing, promotion, or other commercialization of any Company Product that involves payments to or from the Company or any Company Subsidiary in excess of \$1,000,000, in each case, that is not disclosed on Section 4.18(c) of the Company Disclosure Letter, including, for the avoidance of doubt, those Contracts excluded from the definition of "Company License Agreements" under Section 4.18(c)(A)-(D);

(b) Each Contract listed or required to be listed in Section 4.19(a) of the Company Disclosure Letter and each Contract that would be required to be filed as an exhibit to any of the Company SEC Documents pursuant to Items 601(b)(4) and 601(b)(10) of Regulation S-K under the Securities Act are collectively referred to herein as the "Company Contracts". Subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar Laws of general applicability relating to or affecting creditors' rights and to general equity principles, each Company Contract is a valid and binding agreement of the Company or a Company Subsidiary, as the case may be, and is in full force and effect. None of the Company, any Company Subsidiary or, to the knowledge of the Company, any other party thereto is in default or breach in any material respect under the terms of any such Company Contract. To the knowledge of the Company, as of the date hereof, no Person is seeking to terminate or challenging the validity or enforceability of any Company Contract. True, correct and complete copies of each such Company Contract (including all modifications and amendments thereto and waivers thereunder) have been made available to Parent.

(c) The replacement or removal of one or more members of the Board of Directors of the Company will not result, after the giving of notice, with lapse of time or otherwise, in any violation, default or loss of a benefit of the Company or any Company Subsidiary under, or permit the acceleration or termination of any obligation under or require any consent or notice under, any Company Contract.

Section 4.20 Suppliers. Section 4.20 of the Company Disclosure Letter sets forth a true and complete list of all of the material (measured by gross expenditures by the Company and the Company Subsidiaries on a consolidated basis) suppliers (each, a "Material Supplier") to the Company and the Company Subsidiaries for the

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period from January 1, 2019 to the date hereof. No Material Supplier has terminated or cancelled, or delivered written notification to the Company or any of the Company Subsidiaries that it intends to terminate or cancel, or decreased materially or, to the knowledge of the Company, threatened to decrease or limit materially, its relationship with the Company or any of the Company Subsidiaries. Since January 1, 2017, (a) neither the Company nor any Company Subsidiary has been engaged adversely in a Proceeding with any Material Supplier and (b) there has been no change in the pricing or other terms under any Contract with any Material Supplier that is material and adverse to the Company and the Company Subsidiaries, taken as a whole.

Section 4.21 Environmental Laws and Regulations. The Company and each Company Subsidiary is in compliance, and since January 1, 2017 has complied, in all material respects with all applicable Environmental Laws and has obtained and is in compliance in all material respects with all Environmental Permits. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, (a) no notice of violation, notification of liability, demand, request for information, citation, summons or Order relating to or arising out of any Environmental Law has been received by the Company or any Company Subsidiary, and (b) no complaint has been filed, no penalty or fine has been assessed or, to the knowledge of the Company, is threatened and no Proceeding is pending or, to the knowledge of the Company, threatened by any Person involving the Company or any Company Subsidiary, relating to or arising out of any Environmental Law. No Release or threatened Release of Hazardous Substances has occurred at, on, above, under or from any properties currently or, to the knowledge of the Company, formerly owned, leased, operated or used by the Company or any Company Subsidiary that, in each case, has resulted in or would reasonably be expected to result in any material cost, liability or obligation of the Company or any Company Subsidiary under any Environmental Law. The Company has made available to Parent all material environmental site assessments, audits, reports, investigations and studies in the possession, custody or control of the Company or any Company Subsidiary relating to properties or assets currently or formerly owned, leased, operated or used by the Company or any Company Subsidiary or otherwise relating to the Company's or any Company Subsidiary's compliance with Environmental Laws. Neither the Company nor any Company Subsidiary is required by applicable Law or any Governmental Entity to provide financial assurance for the decommissioning of any manufacturing facility.

Section 4.22 Insurance Coverage. The Company and the Company Subsidiaries maintain insurance coverage with reputable insurers in such amounts and covering such risks as the Company reasonably believes, based on past experience, is adequate for the businesses and operations of the Company and the Company Subsidiaries (taking into account the cost and availability of such insurance). Neither the Company nor any Company Subsidiaries has received any written notice of any pending or threatened cancellation (other than in connection with ordinary renewals) or material premium increase (other than premium increases in the ordinary course) with respect to any such material insurance policy, and each Company Subsidiary is in compliance in all material respects with all conditions contained therein. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, (a) all such insurance policies are in full force and effect and (b) will not be affected by, or terminated or lapse by reason of, this Agreement or the consummation of the Merger. There is no material claim pending under any of the Company's insurance policies as to which coverage has been denied by the underwriters of such policies.

Section 4.23 Foreign Corrupt Practices Act and International Trade Sanctions. Neither the Company, any Company Subsidiary nor any of their respective directors or officers, nor, to the knowledge of the Company, any of their respective agents, employees or any other Persons acting on their behalf has, in connection with the operation of their respective businesses, (a) made, promised, offered or authorized any direct or indirect unlawful contributions, payments, gifts, entertainment or any unlawful expenditures relating to political activity to government officials, candidates or members of political parties or organizations, or any other Person, or established or maintained any unlawful or unrecorded funds in violation of the United States Foreign Corrupt Practices Act of 1977, or any other similar applicable Law (including the United Kingdom Bribery Act 2010 or any Laws enacted pursuant to the OECD Convention on Combating Bribery of Foreign Public Officials) (collectively, the "Anti-Corruption Laws"), (b) taken any action in violation of Anti-Corruption Laws or (c) in the past five years violated, operated in noncompliance with, or engaged in any conduct sanctionable under, any

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applicable export restrictions, anti-boycott regulations, economic or financial sanctions or trade embargos or other applicable domestic or foreign Laws, including the regulations enacted, administered and enforced by the U.S. government from time to time, including the U.S. Treasury Department's Office of Foreign Assets Control ("OFAC"), which prohibit transactions involving parties located in countries, regions or territories that are, or whose governments are, the subject or target of comprehensive economic sanctions maintained by OFAC (as of the date of this Agreement, Crimea, Cuba, Iran, North Korea and Syria) and any similar Laws of those jurisdictions in which the Company and the Company Subsidiaries do business, or parties identified on OFAC's Specially Designated Nationals and Blocked Persons List (collectively, "Sanctions"). Neither the Company, nor any Company Subsidiary, nor any of their respective directors, officers, agents, employees or any other Persons acting on their behalf is a Person that is the subject or target of Sanctions, or owned or controlled by such a Person. The Company and each Company Subsidiary has conducted their businesses in compliance in all material respects with Anti-Corruption Laws and has instituted and maintains in effect policies and procedures designed to ensure compliance by the Company, the Company Subsidiaries, and their respective directors, officers, employees and agents with applicable Anti-Corruption Laws.

Section 4.24 Opinion of Financial Advisor. The Board of Directors of the Company has received the opinion of Jefferies LLC (the "Company Financial Advisor"), dated as of October 1, 2019, to the effect that, as of the date of such opinion and subject to the assumptions, limitations, qualifications and conditions set forth therein, the Exchange Ratio is fair, from a financial point of view, to the holders of Company Common Stock. Promptly after the execution of this Agreement, the Company will furnish to Parent, solely for informational purposes, a true and complete copy of the written opinion of the Company Financial Advisor.

Section 4.25 Brokers. No Person other than the Company Financial Advisor is entitled to any brokerage, financial advisory, finder's or similar fee or commission payable by any Party in connection with the Transactions based upon arrangements made by or on behalf of the Board of Directors of the Company (or any committee thereof), the Company or any Company Subsidiary. The Company has made available to Parent a true, correct and complete copy of each agreement between the Company or any Company Subsidiary and the Company Financial Advisor relating to the Transactions.

Section 4.26 Transactions with Affiliates. To the knowledge of the Company and as of the date of this Agreement, since January 1, 2017, there have been no transactions, or series of related transactions, agreements, arrangements or understandings in effect, nor are there any currently proposed transactions, or series of related transactions, agreements, arrangements or understandings, that would be required to be disclosed under Item 404(a) of Regulation S-K that have not been otherwise disclosed in Company SEC Documents filed prior to the date hereof.

Section 4.27 Non-Reliance on Parent Estimates. Parent has made available to the Company, and may continue to make available, estimates, projections and other forecasts for the business of Parent and the Parent Subsidiaries and plan and budget information. The Company acknowledges that these estimates, projections, forecasts, plans and budgets and the assumptions on which they are based were prepared for specific purposes and may vary significantly from each other. Further, the Company acknowledges that there are uncertainties inherent in attempting to make such estimates, projections, forecasts, plans and budgets, that the Company is taking full responsibility for making its own evaluation of the adequacy and accuracy of all estimates, projections, forecasts, plans and budgets so furnished to it (including the reasonableness of the assumptions underlying such estimates, projections, forecasts, plans and budgets), and, except to the extent expressly set forth in the representations and warranties made pursuant to Article V, that the Company is not relying on any estimates, projections, forecasts, plans or budgets furnished by Parent, Merger Sub, any Parent Subsidiary or their respective Affiliates and Representatives, and the Company shall not, and shall cause its Affiliates and its Representatives not to, hold any such Person liable with respect thereto. Nothing herein shall limit the Company's remedies in the case of fraud in connection with the negotiation or execution of this Agreement.

Section 4.28 No Additional Representations. The Company acknowledges and agrees that except for the representations and warranties made by Parent and Merger Sub in Article V, neither Parent, Merger Sub nor any

other Person makes any other express or implied representation or warranty with respect to Parent, Merger Sub or their respective businesses, operations, assets, liabilities, conditions (financial or otherwise) or prospects, notwithstanding the delivery or disclosure to the Company or any of its Affiliates or Representatives of any documentation, forecasts or other information with respect to any one or more of the foregoing.

ARTICLE V

REPRESENTATIONS AND WARRANTIES OF PARENT AND MERGER SUB

Except as (i) set forth in the corresponding Sections or Subsections of a disclosure letter delivered to the Company by Parent prior to, or concurrently with, the execution of this Agreement (the “Parent Disclosure Letter”) (it being agreed that disclosure of any item in any Section or Subsection of the Parent Disclosure Letter shall be deemed a disclosure with respect to any other Section or Subsection to which the relevance of such item is reasonably apparent on its face) or (ii) other than with respect to the Parent Identified Representations, disclosed in the Parent SEC Documents filed with, or furnished to, the SEC pursuant to the Exchange Act since January 1, 2017 and at least two Business Days prior to the date of this Agreement, excluding any disclosures set forth in any Section entitled “Risk Factors” or “Forward-Looking Statements” or in any other Section to the extent they are forward-looking statements or cautionary, nonspecific, predictive or forward-looking in nature (it being agreed that any matter disclosed in any such Parent SEC Document shall be deemed to be disclosed in a Section or Subsection of the Parent Disclosure Letter only to the extent that it is reasonably apparent on the face of such disclosure in such Parent SEC Document that such disclosure is applicable to such Section or Subsection of the Parent Disclosure Letter), Parent and Merger Sub jointly and severally represent and warrant to the Company as follows:

Section 5.1 Organization. Parent is a corporation duly incorporated, validly existing and in good standing under the Laws of the State of Delaware, Merger Sub is a corporation duly formed, validly existing and in good standing under the Laws of the State of Delaware, and each of Parent and Merger Sub has all requisite corporate power and authority to own, lease and operate its properties and assets and to carry on its business as currently conducted, except where any failure to be in good standing has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. Parent has made available to the Company true, correct and complete copies of its and Merger Sub’s Constituent Documents, as amended and in effect on the date of this Agreement, and neither Parent nor Merger Sub is in violation in any material respect of their respective Constituent Documents.

Section 5.2 Subsidiaries.

(a) Each Subsidiary of Parent (individually, a “Parent Subsidiary,” and, collectively, the “Parent Subsidiaries”) is a corporation duly incorporated or a limited liability company, company limited by shares, partnership or other entity duly organized and is validly existing and, to the extent such concept or a similar concept exists in the relevant jurisdiction, in good standing under the Laws of the jurisdiction of its incorporation or organization, as the case may be, and has all requisite corporate or other power and authority, as the case may be, to own, lease and operate its properties and assets and to carry on its business as currently conducted, except where any failure to be in good standing has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. Each Parent Subsidiary is qualified or licensed to do business in each jurisdiction where the ownership, leasing or operation of its properties or assets or conduct of its business requires such qualification or license, except where any failures to be so qualified or licensed have not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. No Parent Subsidiary is in violation in any material respect of its Constituent Documents.

(b) Parent is, directly or indirectly, the record holder and Beneficial Owner of all of the outstanding Securities of each Parent Subsidiary, free and clear of any Liens and free of any other limitation or restriction

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(including any limitation or restriction on the right to vote, sell, transfer or otherwise dispose of the Securities), except for such restrictions imposed by applicable Law. All of such Securities have been duly authorized, validly issued, fully paid and, where applicable, are nonassessable (and no such shares have been issued in violation of any preemptive or similar rights).

(c) The authorized capital stock of Merger Sub consists of 1,000 shares of common stock, par value \$0.01 per share, all of which are validly issued and outstanding. All of the issued and outstanding capital stock of Merger Sub is, and at the Effective Time will be, owned by Parent. Merger Sub has not conducted any business prior to the date of this Agreement and has no, and prior to the Effective Time will have no, assets, liabilities or obligations of any nature other than those incident to its formation and pursuant to this Agreement and the Merger and the other Transactions.

Section 5.3 Capitalization.

(a) As of the date of this Agreement, the authorized Securities of Parent consists of 250,000,000 shares of Parent Common Stock and 25,000,000 shares of preferred stock, par value \$0.01 per share (the "Parent Preferred Stock" and, together with Parent Common Stock, the "Parent Capital Stock"). At the Reference Time: (i) 39,229,308 shares of Parent Common Stock were issued and outstanding, (ii) no shares of Parent Preferred Stock were issued and outstanding, (iii) no shares of Parent Common Stock were held by Parent in its treasury, (iv) 272,224 shares of Parent Common Stock were issuable upon the exercise of outstanding Parent Stock Options, (v) 1,075,585 shares of Parent Common Stock were subject to outstanding awards of Parent restricted stock (including 680,984 shares of Parent Common Stock covered by time-vesting restricted stock awards, 227,503 shares of Parent Common Stock covered by performance-vesting restricted stock awards (payable at the target amounts) and 167,098 shares of Parent Common Stock covered by relative total stockholder return-vesting restricted stock awards (payable at the target amounts)), (vi) 525,754 shares of Parent Common Stock were subject to Parent restricted stock units (including 379,598 shares of Parent Common Stock covered by time-vesting restricted stock unit awards, no shares of Parent Common Stock covered by performance-vesting restricted stock unit awards, and 146,156 shares of Parent Common Stock covered by relative total stockholder return-vesting restricted stock unit awards (payable at the target amounts)) and (vii) 4,976,512 shares of Parent Common Stock were reserved for issuance pursuant to the Parent Stock Plans. All shares of Parent Common Stock to be issued in connection with the Merger will be, when issued in accordance with the terms of this Agreement, duly authorized, validly issued, fully paid and nonassessable and are subject to no preemptive or similar rights. Parent has sufficient authorized, but unissued, shares of Parent Common Stock required to be issued in connection with the Merger. From the Reference Time through the date hereof, there have been no issuances by Parent of Securities, other than the issuance of Parent Common Stock upon the exercise of the Equity Rights of Parent outstanding at the Reference Time and in accordance with their terms in effect at such time.

(b) There are no preemptive or similar rights on the part of any holder of any class of Securities of Parent or any Parent Subsidiary. Neither Parent nor any Parent Subsidiary has any outstanding bonds, debentures, notes or other obligations the holders of which have the right to vote (or which are convertible into or exercisable for Securities having the right to vote) with the holders of any class of Securities of Parent or any Parent Subsidiary on any matter submitted to such holders of Securities. Other than as set forth in Section 5.3(a), there are no other outstanding Equity Rights with respect to Securities of Parent or any Parent Subsidiary. There are no outstanding contractual obligations of Parent or any Parent Subsidiary to repurchase, redeem or otherwise acquire any Securities of Parent or any Parent Subsidiary. There are no proxies, voting trusts or other agreements or understandings to which Parent is a party or is bound with respect to the voting of the Securities of Parent.

Section 5.4 Authorization; Board Approval; Voting Requirements.

(a) Each of Parent and Merger Sub has all requisite corporate power and authority to execute and deliver this Agreement, to perform its obligations hereunder and, subject to the Parent Stockholder Approval and

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the adoption of this Agreement by Parent as the sole stockholder of Merger Sub (which will be effected by Parent as promptly as reasonably practicable after the execution of this Agreement by the Parties), to consummate the Transactions. The execution, delivery and performance of this Agreement and the consummation of the Transactions have been duly and validly authorized by all necessary corporate action, and no other corporate proceedings on the part of either Parent or Merger Sub are necessary for it to authorize this Agreement or to consummate the Transactions, except for, in any such case, the adoption of this Agreement by the Parent Stockholder Approval and the adoption of this Agreement by Parent as the sole stockholder of Merger Sub (which will be effected by Parent as promptly as reasonably practicable after the execution of this Agreement by the Parties). This Agreement has been duly and validly executed and delivered by each of Parent and Merger Sub and, assuming due authorization, execution and delivery by the other Parties, is a legal, valid and binding obligation of each of Parent and Merger Sub, enforceable against each of Parent and Merger Sub in accordance with its terms, subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar Laws of general applicability relating to or affecting creditors' rights and to general equity principles.

(b) The Board of Directors of Parent, at a meeting duly called and held, has (i) determined that this Agreement and the Transactions (including the Parent Share Issuance) are fair to and in the best interests of Parent and its stockholders, (ii) approved, adopted and declared advisable this Agreement and the Transactions (including the Parent Share Issuance), (iii) directed that the Parent Share Issuance be submitted to a vote at a meeting of Parent's stockholders and (iv) subject to Section 7.19(d), recommended the approval of the Parent Share Issuance by Parent's stockholders (the "Parent Recommendation").

(c) The affirmative vote at the Parent Stockholders Meeting or any adjournment or postponement thereof at which a quorum is present of the holders of at least a majority of the votes cast by holders of outstanding shares of Parent Common Stock approving the Parent Share Issuance (such approval, the "Parent Stockholder Approval") is the only vote or consent of the holders of any Parent Capital Stock necessary in connection with the consummation of the Transactions.

Section 5.5 Takeover Statute; Ownership of Company Common Stock.

(a) Assuming the representations and warranties in Section 4.5 are true and correct, no state "fair price," "moratorium," "control share acquisition" or similar anti-takeover statute is applicable to the Transactions.

(b) None of Parent or Merger Sub is, or at any time since January 1, 2017 has been, an "interested stockholder" of the Company as defined in Section 203 of the DGCL. Neither Parent nor any of the Parent Subsidiaries has taken, or authorized or permitted any of its Representatives to take, any action that would cause Parent or any of its "affiliates" or "associates" (each as defined in Section 203 of Delaware Law) thereof to be deemed an "interested stockholder" as defined in Section 203 of the DGCL or otherwise render Section 251 of the DGCL inapplicable to the Merger. Neither Parent nor any of Parent's Affiliates directly or indirectly owns, and at all times since January 1, 2017, neither Parent nor any of Parent's Affiliates has owned, whether Beneficially Owned or otherwise, any Securities of the Company, Equity Rights of the Company or any Contracts convertible into or exercisable or exchangeable for Securities of the Company (through derivative securities or otherwise).

Section 5.6 No Violations; Consents and Approvals.

(a) The execution and delivery of this Agreement by each of Parent and Merger Sub does not and the consummation by each of Parent and Merger Sub of the Transactions will not: (i) assuming the receipt of the Parent Stockholder Approval, conflict with any provisions of the Constituent Documents of Parent or Merger Sub; (ii) violate any Law or rules of any Self-Regulatory Organization (assuming the receipt of the Parent Stockholder Approval and compliance with the matters set forth in Section 5.6(b) (Consents and Approvals)); (iii) result, after the giving of notice, with lapse of time or otherwise, in any violation, default or loss of a benefit

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under, or permit the acceleration or termination of any obligation under or require any consent or notice under, any Contract to which Parent or Merger Sub is a party; (iv) result in the creation or imposition of any Lien upon any properties or assets of Parent or any Parent Subsidiary; or (v) cause the suspension or revocation of any Parent Permit, except, in the case of clauses (ii), (iii), (iv) and (v), as would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

(b) No clearance, consent, approval, Order, license or authorization of, or declaration, registration or filing with, or notice to, or Permit issued by any Governmental Entity or Self-Regulatory Organization is required to be made or obtained by Parent or Merger Sub in connection with the execution or delivery of this Agreement by each of Parent and Merger Sub or the consummation by each of Parent and Merger Sub of the Transactions, except for: (i) compliance by Parent with the HSR Act and the Foreign Competition Laws; (ii) the filing of the Certificate of Merger with the Secretary of State in accordance with the DGCL; (iii) (A) the filing with the SEC of the Joint Proxy Statement/Prospectus in accordance with Regulation 14A promulgated under the Exchange Act, (B) the filing with the SEC, and the declaration of effectiveness under the Securities Act, of the Form S-4 and (C) the filing with the SEC of such reports under and such other compliance with the Exchange Act and the Securities Act as may be required in connection with this Agreement and the Transactions; (iv) such consents, registrations, declarations, notices or filings as are required to be made or obtained under the securities or “blue sky” Laws of various states in connection with the Parent Share Issuance; (v) such filings with and approvals of the Nasdaq Global Market as are required to permit the consummation of the Merger and the listing of the shares of Parent Common Stock to be issued as Merger Consideration; and (vi) any such other clearance, consent, approval, Order, license, authorization, declaration, registration, filing, notice or Permit, the failure of which to make or obtain would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

Section 5.7 SEC Reports; Parent Financial Statements.

(a) Parent has timely filed or furnished all reports, schedules, forms, statements and other documents required to be filed or furnished by it with or to the SEC since January 1, 2017 (together with all exhibits, financial statements and schedules thereto, all information incorporated therein by reference and all documents filed with the SEC during such period by Parent on a voluntary basis, the “Parent SEC Documents”). As of its filing (or furnishing) date or, if amended prior to the date of this Agreement, as of the date of the last such amendment, each Parent SEC Document complied in all material respects with the applicable requirements of the Exchange Act and the Securities Act, as the case may be. As of its filing date or, if amended prior to the date of this Agreement, as of the date of the last such amendment, each Parent SEC Document filed pursuant to the Exchange Act did not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. Each Parent SEC Document that is a registration statement, as amended or supplemented, if applicable, filed pursuant to the Securities Act, as of the date such registration statement or amendment became effective prior to the date of this Agreement, did not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading.

(b) The Parent Financial Statements, which have been prepared, in all material respects, from the books and records of Parent and the Parent Subsidiaries, comply as to form in all material respects with the applicable accounting requirements and the published rules and regulations of the SEC with respect thereto and have been prepared in accordance with GAAP applied on a consistent basis throughout the periods presented, except as otherwise noted therein. The Parent Financial Statements (including the related notes) present fairly in all material respects the consolidated financial position of Parent and the Parent Subsidiaries as at the respective dates thereof and their consolidated results of operations and cash flows for the periods then ended (subject to normal and recurring year-end audit adjustments in the case of any unaudited interim financial statements).

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(c) As of the date hereof, there are no material outstanding or unresolved written comments from the SEC with respect to the Parent SEC Documents. As of the date hereof, none of the Parent SEC Documents are, to the knowledge of Parent, the subject of ongoing SEC review.

(d) The audit committee of the Board of Directors of Parent has established “whistleblower” procedures that meet the requirements of Exchange Act Rule 10A-3, and has delivered or made available to the Company true, complete and correct copies of such procedures in effect as of the date of this Agreement. Since January 1, 2017, neither Parent nor any Parent Subsidiary has received any “complaints” (within the meaning of Exchange Act Rule 10A-3) in respect of any accounting, internal accounting controls or auditing matters. To Parent’s knowledge, since January 1, 2017, no complaint seeking relief under Section 806 of the Sarbanes-Oxley Act has been filed with the United States Secretary of Labor and no employee of Parent or any Parent Subsidiary has threatened to file any such complaint.

(e) To the extent required by the Exchange Act, Parent and the Parent Subsidiaries have established and maintain disclosure controls and procedures (as defined in Rule 13a-15 under the Exchange Act) designed to ensure that material information relating to Parent, including the Parent Subsidiaries, is made known to Parent’s principal executive officer and its principal financial officer by others within those entities, including during the periods in which the periodic reports required under the Exchange Act are being prepared. Each of the principal executive officer of Parent and the principal financial officer of Parent (or each former principal executive officer of Parent and each former principal financial officer of Parent, as applicable) has made all certifications required by Rule 13a-14 or 15d-14 under the Exchange Act and Sections 302 and 906 of the Sarbanes-Oxley Act with respect to the Parent SEC Documents, and the statements contained in such certifications are true and accurate in all material respects as of the date on which they were made. For purposes of this Section 5.7, “principal executive officer” and “principal financial officer” shall have the meanings given to such terms in the Sarbanes-Oxley Act. Since January 1, 2017, Parent has complied in all material respects with the provisions of the Sarbanes-Oxley Act.

(f) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, Parent maintains a system of “internal control over financial reporting” (as defined in Rule 13a-15(f) of the Exchange Act) to provide reasonable assurance regarding the reliability of Parent’s financial reporting and the preparation of Parent’s financial statements for external purposes in accordance with GAAP. Parent’s principal executive officer and principal financial officer have disclosed, based on their most recent evaluation of such internal controls prior to the date of this Agreement, to Parent’s auditors and the audit committee of the Board of Directors of Parent “(i) all significant deficiencies and material weaknesses” in the design or operation of internal controls which are reasonably likely to adversely affect Parent’s ability to record, process, summarize and report financial information and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in internal controls. Parent has made available to the Company prior to the date of this Agreement a true and complete (in all material respects) summary of any disclosure of the type described in the preceding sentence made by management to Parent’s auditors and audit committee during the period beginning January 1, 2017 and ending as of the date hereof.

(g) Neither Parent nor any of the Parent Subsidiaries is a party to, or has any commitment to become a party to, any off-balance sheet joint venture, off-balance sheet partnership or other “off-balance sheet arrangement” (as defined in Item 303(a) of Regulation S-K under the Exchange Act).

Section 5.8 Absence of Undisclosed Liabilities. Parent and the Parent Subsidiaries do not have any liabilities, obligations or commitments, whether or not accrued, known or unknown, contingent or otherwise, that would be required by GAAP to be reflected on the consolidated balance sheet of Parent and the Parent Subsidiaries, except for (i) liabilities, obligations and commitments that have not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, (ii) liabilities, obligations or commitments disclosed and provided for in the consolidated balance sheet (or the notes thereto) of Parent and

the Parent Subsidiaries as of June 30, 2019 and (iii) liabilities, obligations or commitments incurred in the ordinary course of business consistent with past practice since June 30, 2019.

Section 5.9 Regulatory Matters.

(a) (i) Each of Parent and the Parent Subsidiaries holds (A) all authorizations under the FDCA, PHSa, and the regulations of the FDA promulgated thereunder, and (B) authorizations of any applicable Governmental Entity that are concerned with the development, testing, packaging, labeling, storage, import, export, marketing, sale, pricing, use, handling and control, strength, purity, quality, safety, efficacy, reliability, distribution or manufacturing of any of the Parent Products (any such Governmental Entity, a “Parent Regulatory Agency”) necessary for the lawful operation of the businesses of Parent and each of the Parent Subsidiaries as currently conducted (the “Parent Regulatory Permits”); (ii) all such Parent Regulatory Permits are valid and in full force and effect and will continue to be in full force and effect immediately following the Closing; and (iii) Parent and the Parent Subsidiaries are in compliance in all material respects with the terms of all Parent Regulatory Permits. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, there are no Proceedings pending or, to the knowledge of Parent, threatened against Parent or any Parent Subsidiary that could reasonably be expected to result in the revocation, cancellation, suspension or any other adverse modification of any Parent Regulatory Permit held by Parent or any Parent Subsidiary.

(b) Neither Parent nor any of the Parent Subsidiaries is party to any material corporate integrity agreements, monitoring agreements, consent Orders or similar agreements with or imposed by any Parent Regulatory Agency.

(c) All pre-clinical and clinical investigations in respect of a Parent Product conducted or sponsored by or on behalf of Parent or any of the Parent Subsidiaries are being and, since January 1, 2017 have been, conducted in compliance in all material respects with (i) all applicable Laws administered or issued by the applicable Parent Regulatory Agencies, including (A) FDA standards for the design, conduct, performance, monitoring, auditing, recording, analysis and reporting of clinical trials contained in Title 21 parts 50, 54, 56, 312, 314 and 320 of the Code of Federal Regulations, (B) applicable federal, state and provincial Laws restricting the collection, use and disclosure of individually identifiable health information and Personal Information and (C) applicable Healthcare Laws, and (ii) experimental protocols, procedures and controls pursuant to, where applicable, accepted professional and scientific standards. No pre-clinical or clinical testing conducted by or on behalf of Parent or any Parent Subsidiary relating to any Parent Product has been terminated or suspended due to safety or other non-business reasons, and, to the knowledge of Parent, there are no facts that could give rise to such a determination. No Parent Regulatory Agency, clinical investigator, institutional review board or independent monitoring committee has provided notice that it has initiated or, to the knowledge of Parent, threatened to initiate any action to place a hold order on, or otherwise terminate, delay, suspend or modify any such ongoing testing, and, to the knowledge of Parent, there are no facts that would reasonably be expected to give rise to such a determination.

(d) Since January 1, 2017, neither Parent nor any of the Parent Subsidiaries has received any written notice from the FDA or the EMA or any foreign agency with jurisdiction over the development, marketing, labeling, sale, use handling and control, safety, efficacy, reliability or manufacturing of the Parent Products which would reasonably be expected to lead to the denial, limitation, revocation or rescission of any of the Parent Regulatory Permits or of any application for marketing approval currently pending before the FDA or such other Parent Regulatory Agency.

(e) Since January 1, 2017, all reports, documents, claims, Permits and notices required to be filed, maintained or furnished to the FDA or any other Parent Regulatory Agency by Parent and the Parent Subsidiaries have been so filed, maintained or furnished. All such reports, documents, claims, Permits and notices were true and complete in all material respects on the date filed (or were corrected in or supplemented by a subsequent

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filing). Since January 1, 2017, neither Parent nor any of the Parent Subsidiaries, nor, to the knowledge of Parent, any officer, employee, agent or distributor of Parent or any of the Parent Subsidiaries, has made an untrue statement of a material fact or a fraudulent statement to the FDA or any other Parent Regulatory Agency, failed to disclose a material fact required to be disclosed to the FDA or any other Parent Regulatory Agency, or committed an act, made a statement, or failed to make a statement, in each such case, related to the business of Parent or any of the Parent Subsidiaries, that, at the time such disclosure was made, would reasonably be expected to provide a basis for the FDA to invoke its policy respecting “Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities” set forth in 56 Fed. Reg. 46191 (September 10, 1991) or for the FDA or any other Parent Regulatory Agency to invoke any similar policy. Since January 1, 2017, (i) neither Parent nor any of the Parent Subsidiaries, nor, to the knowledge of Parent, any officer, employee, agent or distributor of Parent or any of the Parent Subsidiaries, has been debarred or convicted of any crime or engaged in any conduct for which debarment is mandated by 21 U.S.C. § 335a(a) or any similar applicable Law or authorized by 21 U.S.C. § 335a(b) or any similar applicable Law applicable in other jurisdictions in which any of the Parent Products are sold or intended by Parent to be sold; and (ii) neither Parent nor any of the Parent Subsidiaries, nor, to the knowledge of Parent, any officer, employee, agent or distributor of Parent or any of the Parent Subsidiaries, has been excluded from participation in any federal health care program or convicted of any crime or engaged in any conduct for which such Person could be excluded from participating in any federal health care program under Section 1128 of the Social Security Act of 1935 or any similar applicable Law or program.

(f) As to each Parent Product subject to the FDCA and the regulations of the FDA promulgated thereunder or any similar applicable Law in any foreign jurisdiction in which any of the Parent Products are sold or intended by Parent or any of the Parent Subsidiaries to be sold that is or has been developed, manufactured, tested, distributed or marketed by or on behalf of Parent or any of the Parent Subsidiaries, each such Parent Product is being or has been developed, manufactured, processed, stored, distributed, labeled, tested, sold or marketed in compliance in all material respects with all applicable Laws, including those relating to investigational use, marketing approval, current good manufacturing practices, packaging, labeling, advertising, record keeping, reporting and security (and further including the Physician Payment Sunshine Act (42 U.S.C. § 1320a-7h)). Neither Parent nor any of the Parent Subsidiaries have received since January 1, 2017 any written notice from any Governmental Entity (including any Parent Regulatory Agency) threatening any, and there is no pending, Proceeding alleging any material violation applicable to any Parent Product by Parent or any of the Parent Subsidiaries of any applicable Law, including any Healthcare Law.

(g) Since January 1, 2017, neither Parent nor any of the Parent Subsidiaries has voluntarily or involuntarily initiated, conducted or issued, or caused to be initiated, conducted or issued, any material recall, field corrections, market withdrawal or replacement, safety alert, warning, “dear doctor” letter, investigator notice, or other notice or action to wholesalers, distributors, retailers, healthcare professionals or patients relating to an alleged lack of safety, efficacy or regulatory compliance of any Parent Product. To the knowledge of Parent, there are no facts as of the date hereof which are reasonably likely to cause, and neither Parent nor any of the Parent Subsidiaries has received any written notice from the FDA or any other Parent Regulatory Agency since January 1, 2017 regarding: (i) the recall, market withdrawal or replacement of any Parent Product sold or intended to be sold by Parent or any of the Parent Subsidiaries, (ii) a material change in the marketing classification or a material change in the labeling of any such Parent Products, (iii) a termination or suspension of the manufacturing, marketing, or distribution of such Parent Products or (iv) a material negative change in reimbursement status of a Parent Product.

Section 5.10 Form S-4; Joint Proxy Statement/Prospectus. None of the information supplied or to be supplied by or on behalf of Parent or any Parent Subsidiary for inclusion or incorporation by reference in (a) the Form S-4 will, at the time the Form S-4 is filed with the SEC or at any time it is supplemented or amended or at the time it becomes effective under the Securities Act, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading or (b) the Joint Proxy Statement/Prospectus will, on the date it is first mailed to the stockholders of the Company and Parent, and at the time of the Parent

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Stockholders Meeting or the Company Stockholders Meeting, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they are made, not misleading. The Joint Proxy Statement/Prospectus will comply as to form in all material respects with the requirements of the Securities Act. Notwithstanding the foregoing, no representation or warranty is made by Parent with respect to statements made or incorporated by reference therein based on information that was not supplied by or on behalf of Parent or any Parent Subsidiary for inclusion or incorporation by reference in the Joint Proxy Statement/Prospectus.

Section 5.11 Absence of Certain Changes. Since December 31, 2018 through the date of this Agreement, (a) except for the execution and performance of this Agreement and the discussions, negotiations and transactions related thereto, (i) Parent and the Parent Subsidiaries have conducted in all material respects their respective businesses only in the ordinary course consistent with past practice, and (ii) there has not been any action taken by Parent or any Parent Subsidiary that, if taken during the period from the date of this Agreement through the Effective Time, would require consent of the Company pursuant to Section 6.2(b), (d), (e) or (g) (Covenants of Parent), and (b) there has not been any Change that has had or would reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

Section 5.12 Litigation. There is no, and since January 1, 2017 there has been no, Proceeding (excluding any Proceeding of the type contemplated by the second to last sentence of this Section 5.12) pending or, to the knowledge of Parent, threatened against Parent or any Parent Subsidiary, or their respective properties or rights or any of their respective current or former directors, officers, employees or contractors (in their capacities as such or relating to their services or relationship to Parent or any of the Parent Subsidiaries) and that has had or would reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. There is no, and since January 1, 2017 there has been no, material Order of any Governmental Entity, Self-Regulatory Organization or arbitrator outstanding against Parent or any Parent Subsidiary. As of the date hereof, there is no Proceeding pending or, to the knowledge of Parent, threatened against Parent or any Parent Subsidiary, which seeks to challenge, restrain, enjoin or delay the consummation of the Merger which seeks damages in connection therewith, and no injunction of any type has been entered or issued. There is no Proceeding pending in which Parent or any Parent Subsidiary is a plaintiff.

Section 5.13 Compliance with Laws.

(a) Except as has not had or would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, Parent and the Parent Subsidiaries hold all Permits which are necessary for the lawful conduct of their respective businesses or ownership of their respective assets and properties (the "Parent Permits"). All Parent Permits are in full force and effect and none of the Parent Permits have been withdrawn, revoked, suspended or cancelled nor is any such withdrawal, revocation, suspension or cancellation pending or, to the knowledge of Parent, threatened. Except as has not had or would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, each of Parent and the Parent Subsidiaries is, and since January 1, 2017 has been, in compliance with the terms of the Parent Permits. Except as has not had or would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, there are no, and since January 1, 2017 have been no, Proceedings pending or, to the knowledge of Parent, threatened that seek the revocation, cancellation or adverse modification of any Parent Permit.

(b) Except as has not had or would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, taken as a whole, each of Parent and the Parent Subsidiaries, taken as a whole, the businesses of Parent and each of the Parent Subsidiaries are, and since January 1, 2017 have been, conducted in compliance with all applicable Laws and the applicable rules of any Self-Regulatory Organization. Each of Parent and any Parent Subsidiaries is in compliance in all material respects with its Constituent Documents.

Section 5.14 Taxes.

(a) Parent and each Parent Subsidiary have (i) duly and timely filed (or there have been duly and timely filed on its behalf) with the appropriate Governmental Entities or Taxing Authorities all income Tax Returns and all other material Tax Returns required to be filed by it, and all notifications required to be filed by it in respect of the Parent Stock Plans, which Tax Returns and notifications were true, correct and complete in all material respects, (ii) duly and timely paid in full or withheld, or established adequate reserves in accordance with GAAP for, all material Taxes that are due and payable by it (including estimated Tax payments), whether or not such Taxes were shown on any Tax Return or asserted by the relevant Governmental Entity or Taxing Authority, (iii) established reserves in accordance with GAAP that are adequate for the payment of all material Taxes not yet due and payable with respect to the results of operations of Parent and each Parent Subsidiary through the date of this Agreement and (iv) complied in all material respects with all Laws applicable to the withholding and payment over of material Taxes and has timely withheld and paid over to, or, where amounts have not been so withheld, established an adequate reserve under GAAP for the payment to, the respective proper Governmental Entities or Taxing Authorities all material amounts required to be so withheld and paid over.

(b) There (i) is no material deficiency, Proceeding or request for information now pending, outstanding or threatened against or with respect to Parent or any Parent Subsidiary in respect of any Taxes or Tax Returns and (ii) are no material requests for rulings or determinations in respect of any Taxes or Tax Returns pending between Parent or any Parent Subsidiary and any authority responsible for such Taxes or Tax Returns.

(c) No deficiency for any Tax has been asserted or assessed by any Governmental Entity or Taxing Authority in writing against Parent or any Parent Subsidiary (or, to the knowledge of Parent or any Parent Subsidiary, has been threatened or proposed), except for deficiencies which have been satisfied by payment, settled or been withdrawn or which are being diligently contested in good faith by appropriate Proceedings and for which adequate reserves have been established in accordance with GAAP.

(d) There are no Tax sharing agreements, Tax indemnity agreements or other similar agreements with respect to or involving Parent or any Parent Subsidiary.

(e) None of Parent or any Parent Subsidiary has any liability for material Taxes as a result of having been a member of any affiliated group within the meaning of Section 1504(a) of the Code, or any similar affiliated or consolidated group for Tax purposes under state, local or foreign Law (other than a group the common parent of which is Parent), or has any liability for the Taxes of any Person (other than Parent or any of the Parent Subsidiaries) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local or foreign Law), or as a transferee or successor, by Contract (other than Contracts entered into in the ordinary course of business, the primary purpose of which is not Tax) or otherwise.

(f) There are no material adjustments under Section 481 of the Code (or similar or analogous provision of state, local or foreign Law) for income Tax purposes applicable to or required to be made by Parent or any Parent Subsidiary as a result of changes in methods of accounting or other events occurring on or before the date hereof.

(g) None of Parent or any Parent Subsidiary will be required to include any material item of income in, or exclude any material item of deduction from, taxable income for any taxable period (or portion thereof) ending after the Closing Date as a result of any (i) change in method of accounting for a taxable period ending on or prior to the Closing Date, (ii) "closing agreement" as described in Section 7121 of the Code (or any corresponding or similar provision of state, local or foreign Tax Law) executed on or prior to the Closing Date, (iii) intercompany transactions or excess loss account described in Treasury Regulations under Section 1502 of the Code (or any corresponding or similar provision of state, local or foreign Tax Law), (iv) installment sale or open transaction disposition made on or prior to the Closing Date, (v) prepaid amount received on or prior to the Closing Date, (vi) cancellation or indebtedness income deferred pursuant to Section 108(i) of the Code, (vii) any

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inclusion under Section 951(a) or Section 951A of the Code attributable to (A) “subpart F income” within the meaning of Section 952 of the Code, (B) direct or indirect holding of “United States property” within the meaning of Section 956 of the Code, (C) “global intangible low-taxed income” as defined in Section 951A of the Code, in each case, determined as if the relevant taxable years ended on the Closing Date or (D) any inclusion under Section 965 of the Code, determined without regard to any election pursuant to Section 965(h) of the Code or (viii) otherwise as a result of a transaction or accounting method that accelerated an item of deduction into periods ending on or before the Closing Date or a transaction or accounting method that deferred an item of income into periods beginning after the Closing Date.

(h) There are no Liens for Taxes upon any property or assets of Parent or any Parent Subsidiary, except for Permitted Liens.

(i) Neither Parent nor any Parent Subsidiary has participated in a “reportable transaction” within the meaning of Treasury Regulations Section 1.6011-4(b).

(j) No material claim, other than claims defeated or withdrawn, has ever been made by an authority in a jurisdiction where Parent or any Parent Subsidiary has not filed Tax Returns that it is or may be subject to taxation by that jurisdiction.

(k) Neither Parent nor any Parent Subsidiary has waived any statute of limitations in respect of Taxes or agreed to any extension of time with regard to a Tax assessment or deficiency (other than pursuant to extensions of time to file Tax Returns obtained in the ordinary course).

(l) None of Parent or any Parent Subsidiary has been a “controlled corporation” or a “distributing corporation” in any distribution occurring during the two-year period ending on the date hereof that was purported or intended to be governed by Section 355 of the Code (or any similar provision of state, local or foreign Law).

(m) Parent is not a foreign person within the meaning of Treasury Regulations Section 1.1445-2. Parent is not, and has not been at any time within the last five years, a “United States real property holding corporation” within the meaning of Section 897(c)(2) of the Code.

(n) There is no power of attorney given by or binding upon Parent or any Parent Subsidiary with respect to Taxes for any period for which the statute of limitations (including any waivers or extensions) has not yet expired.

(o) None of the Indebtedness of Parent or any Parent Subsidiary constitutes (i) “corporate acquisition indebtedness” (as defined in Section 279(b) of the Code) with respect to which any interest deductions may be disallowed under Section 279 of the Code or (ii) an “applicable high yield discount obligation” under Section 163(i) of the Code.

(p) None of Parent or any Parent Subsidiary has taken or failed to take any action, or has knowledge of any facts or circumstances, that would prevent the Merger from constituting a Tax-free reorganization described in Section 368(a) and related provisions of the Code.

(q) No capital contributions have been made to Parent or any Parent Subsidiary (either directly or indirectly) at any time as part of a plan a principal purpose of which was to increase any limitation relating to any such entity under Section 382 of the Code.

Section 5.15 Real Property. Parent or a Parent Subsidiary has good and marketable title to all the real property reflected in the latest audited balance sheet included in the Parent Financial Statements as being owned by Parent or a Parent Subsidiary or acquired after the date thereof (except properties sold or otherwise disposed

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of since the date thereof in the ordinary course of business) (the “Parent Owned Properties”), free and clear of all Liens, except Permitted Liens. The Parent Leased Real Property described in Section 5.15 of the Parent Disclosure Letter sets forth each Lease for the Parent Leased Real Property, which constitutes all the real property leased by Parent and the Parent Subsidiaries. Parent or a Parent Subsidiary has a valid leasehold interest in each Parent Leased Real Property free and clear of all Liens, except for Permitted Liens. Except as have not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, all buildings, structures, fixtures and improvements included within the Parent Leased Real Property (the “Parent Improvements”) are in good repair and operating condition, and are adequate and suitable for the purposes for which they are presently being used or held for use, and to the knowledge of Parent, there are no facts or conditions affecting any of the Parent Improvements that, in the aggregate, would reasonably be expected to interfere with the current use, occupancy or operation thereof. Except as have not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, no portion of such Parent Leased Real Property has suffered any damage by fire or other casualty loss which has not heretofore been completely repaired and restored to its original condition (ordinary wear and tear excepted).

Section 5.16 Employee Benefit Plans and Related Matters; ERISA.

(a) As used herein, “Parent Benefit Plans” means, collectively, each employment, consulting, incentive, bonus, deferred compensation, incentive compensation, stock purchase, stock option, equity compensation, phantom equity, retention, change of control, severance or termination pay, vacation, sick, hospitalization or other medical, life or other insurance, supplemental unemployment benefits, profit-sharing, pension, retirement, supplemental retirement, welfare, fringe or other benefit plan, program, trust, agreement or arrangement, and each other material employee benefit plan, program, agreement or arrangement or remuneration of any kind, whether or not in writing and whether or not funded, including, but not limited to, “employee benefit plans” within the meaning of Section 3(3) of ERISA in each case that is currently maintained or contributed to or required to be contributed to by (i) Parent, (ii) any Parent Subsidiary or (iii) any ERISA Affiliate, in any case for the “benefit of any current or former employee, consultant, or director of the Parent or any Parent Subsidiary or pursuant to which Parent or any Parent Subsidiary would have any liability (other than any plan, policy, program or arrangement mandated by applicable Law or sponsored or maintained by a professional employer organization).

(b) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect:

(i) Neither Parent nor any Parent ERISA Affiliate maintains or contributes to or ever in the past six years maintained or was required to contribute to any plan or arrangement that is or was (i) subject to Section 412 of the Code or Section 302 of Title IV of ERISA, (ii) a multiple employer welfare arrangement within the meaning of Section 3(40) of ERISA or (iii) a multiemployer plan within the meaning of Section 3(37) or 4001(a)(3) of ERISA.

(ii) Each Parent Benefit Plan intended to be “qualified” within the meaning of Section 401(a) of the Code has received a favorable determination letter from the IRS as to its qualification and, to the knowledge of Parent, no event has occurred that could reasonably be expected to result in disqualification of such Parent Benefit Plan.

(iii) Each of the Parent Benefit Plans has been operated and administered in accordance with its terms and all applicable Laws, including ERISA and the Code. No individual who has performed services for Parent or any of the Parent Subsidiaries has been improperly excluded from participation in any Parent Benefit Plan.

(iv) There are no pending or, to the knowledge of Parent, threatened claims in respect of or relating to any of the Parent Benefit Plans, by any employee or beneficiary covered under any Parent Benefit Plan or otherwise involving any Parent Benefit Plan (other than routine claims for benefits) and no audit or other Proceeding by a Governmental Entity is pending, or to the knowledge of Parent, threatened with respect to any Parent Benefit Plan.

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(v) Neither Parent, nor any Parent Subsidiary, any Parent ERISA Affiliate, any Parent Benefit Plan, any trust created thereunder, nor, to the knowledge of Parent, any trustee or administrator thereof has engaged in a transaction in connection that could reasonably be expected to give rise to a civil liability under either Section 409 of ERISA or Section 502(i) of ERISA or a Tax imposed pursuant to Section 4975 or 4976 of the Code.

(vi) No Parent Benefit Plan provides benefits, including death or medical benefits (whether or not insured), with respect to current or former employees or directors of Parent or any Parent Subsidiary beyond their retirement or other termination of service, other than (i) coverage mandated solely by applicable Law, (ii) death benefits or retirement benefits under any "employee pension plan" (as defined in Section 3(2) of ERISA), (iii) deferred compensation benefits accrued as liabilities on the books of Parent or a Parent Subsidiary or (iv) benefits the full costs of which are borne by the current or former employee or director or his or her beneficiary.

(vii) Neither Parent nor any Parent Subsidiary has any obligation to gross-up, indemnify or otherwise reimburse any person for any tax under Section 409A of 4999 of the Code.

Section 5.17 Employees; Labor Matters.

(a) Neither Parent nor any Parent Subsidiary is, or since January 1, 2017 has been, party to, bound by, or is currently in the process of negotiating a collective bargaining agreement, other labor-related agreement or understanding or work rules with any labor union, labor organization or works council.

(b) None of the employees, consultants or workers of Parent or any Parent Subsidiary are represented by a labor union, other labor organization or works council and, to the knowledge of Parent, (i) there is no effort currently being made or threatened by or on behalf of any labor union or labor organization to organize any employees, consultants or workers of Parent or any Parent Subsidiary, and there are currently no activities related to the establishment of a works council representing employees, consultants or workers of Parent or any Parent Subsidiary, (ii) no demand for recognition of any employees, consultants or workers of Parent or any Parent Subsidiary has been made by or on behalf of any labor union or labor organization in the past three years and (iii) no petition has been filed, nor has any Proceeding been instituted by any employee, consultant or worker of Parent or any Parent Subsidiary or group of employees, consultants or workers of Parent or any Parent Subsidiary with any labor relations board or commission seeking recognition of a collective bargaining representative in the past three years.

(c) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, there is no pending or, to the knowledge of Parent, threatened (i) strike, lockout, work stoppage, slowdown, picketing or material labor dispute or other industrial action with respect to or involving any current or former employees, directors, consultants, workers or applicants for employment of Parent or any Parent Subsidiary, and there has been no such action or event in the past five years or (ii) arbitration or material grievance against Parent or any Parent Subsidiary involving current or former employees, directors, consultants, workers, applicants for employment or representatives of employees, directors, consultants, workers or applicants for employment of Parent or any Parent Subsidiary.

(d) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, Parent and the Parent Subsidiaries are in compliance with all (i) Laws respecting employment and employment practices, terms and conditions of employment, labor relations, collective bargaining, disability, immigration, layoffs, health and safety, wages, hours and benefits, including, but not limited to, classification of employees, consultants, workers and independent contractors and classification of employees, consultants and workers for overtime eligibility, non-discrimination in employment, data protection, workers' compensation and the collection and payment of withholding and/or payroll Taxes and similar Taxes and (ii) obligations of Parent or any of the Parent Subsidiaries under any employment agreement, agreement for the provision of personal services, severance agreement, collective bargaining agreement or any similar employment or labor-related agreement or understanding.

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(e) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, there is no charge, complaint or investigation, pending or, to the knowledge of Parent, threatened before any Governmental Entity alleging unlawful discrimination in employment practices, unfair labor practices, wage and hour violations, safety or health violations or any other unlawful employment practices by Parent or any of the Parent Subsidiaries.

Section 5.18 Intellectual Property.

(a) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect:

(i) Parent or a Parent Subsidiary is the sole and exclusive owner of, free and clear of all Liens (except Permitted Liens), all U.S. and foreign (A) Patents, (B) registered Trademarks (including internet domain name registrations), pending applications for Trademarks and material unregistered Trademarks, (C) Copyright registrations and applications and (D) material Software, in each of the foregoing, which are owned by Parent or a Parent Subsidiary (collectively, the "Parent Owned Intellectual Property.") that are material to their respective businesses;

(ii) the Parent Owned Intellectual Property that is subject to a registration or application with a Governmental Entity is valid, enforceable (excluding pending applications), subsisting, in full force and effect and has not been cancelled, expired or abandoned;

(iii) all documents, recordations and certificates in connection with the registration or application for registration of the Parent Owned Intellectual Property have been filed with the relevant patent, copyright, trademark or other authorities in any relevant jurisdictions, as the case may be, for the purposes of prosecuting, maintaining and perfecting such Parent Owned Intellectual Property;

(iv) Parent and each Parent Subsidiary has complied with all applicable notice and marking requirements for, and none of the labels or other packaging or marketing materials with respect to the Parent Products contains any false, inaccurate or incorrect marking for, the Parent Owned Intellectual Property;

(v) no inequitable conduct, nor any on-sale bar or public use or improper disclosure activity or violation, has been engaged in or committed by Parent or a Parent Subsidiary with respect to any Parent Owned Intellectual Property or in the prosecution of any Patent in any Parent Owned Intellectual Property, and no material information was withheld by Parent or a Parent Subsidiary from any entity requiring disclosure of such information during prosecution of such Patents; and

(vi) all filings, payments and other actions required to be made or taken to maintain each item of registered Parent Owned Intellectual Property in full force and effect have been made by the applicable deadline under the applicable Law.

(b) No material royalties, honoraria or other fees are payable to any third parties for the use of or right to use any Parent Owned Intellectual Property. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, neither the execution and delivery of this Agreement by Parent nor consummation by Parent of the Transactions will result in any limitation on Parent's and/or a Parent Subsidiary's right, title or interest (to the extent applicable) in any Parent Owned Intellectual Property.

(c) Within the past six years, there have been no asserted, pending, or, to the knowledge of Parent, threatened (including in the form of offers or invitations to obtain a license) Proceedings alleging that the activities or conduct of the business of Parent or a Parent Subsidiary infringe upon, misappropriate, or otherwise violate or constitute the unauthorized use of the Intellectual Property of any third party or challenging Parent's or

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a Parent Subsidiary's ownership, use, validity, enforceability or registrability of any Parent Owned Intellectual Property (but excluding routine prosecution Proceedings before the United States Patent and Trademark Office or equivalent foreign Governmental Entities).

(d) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, the conduct of the business of Parent and the Parent Subsidiaries by Parent as conducted in the past six years and as currently conducted does not infringe upon (either directly or indirectly, such as through contributory infringement or inducement to infringe), misappropriate or otherwise violate, and has not infringed upon (directly or indirectly), misappropriated or otherwise violated, any Intellectual Property of any other Person.

(e) To the knowledge of Parent, no third party is misappropriating, infringing, diluting or violating any Parent Owned Intellectual Property and no claims, suits, arbitrations or other adversarial Proceedings have been brought or threatened against any third party with respect thereto by Parent or a Parent Subsidiary.

(f) Parent and each Parent Subsidiary have taken commercially reasonable measures designed to protect and maintain the secrecy, confidentiality and value of material Trade Secrets owned or held by Parent and the Parent Subsidiaries, including requiring its past and present employees, contractors, consultants and other parties having access thereto to execute valid, written nondisclosure agreements requiring such individuals to hold all such material Trade Secrets and other confidential information in confidence both during and after their employment and/or engagement. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, no such material Trade Secrets or confidential information have been disclosed or authorized to be disclosed to any third party other than pursuant to a nondisclosure agreement. To the knowledge of Parent, no third party to any nondisclosure agreement with Parent or a Parent Subsidiary is in breach, violation or default thereof.

(g) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, each current and former employee, consultant, contractor and/or individual that has delivered, developed, contributed to, modified or improved material Intellectual Property owned or purported to be owned by Parent or a Parent Subsidiary has executed an agreement assigning to Parent or such Parent Subsidiary all of such employee's, consultant's, contractor's and/or individual's rights in such development, contribution, modification or improvement.

(h) With respect to any material Software that is owned by Parent or a Parent Subsidiary, such Software was either developed (i) by employees of Parent or such Parent Subsidiary within the scope of their employment or (ii) by independent contractors who have assigned their rights in such Software to Parent or such Parent Subsidiary pursuant to written agreements.

(i) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, no Open Source Software (i) has been modified by Parent or any Parent Subsidiary, (i) has been embedded in or otherwise combined by Parent or any Parent Subsidiary with any other Software, or (iii) has been distributed by Parent or any Parent Subsidiary to any third party either independently or as part of a Parent Product, in each case, in a manner that would condition the license governing such Open Source Software on Parent's or a Parent Subsidiary's (A) disclosing or distributing any Software owned by Parent or a Parent Subsidiary in source code form, (B) licensing any Software owned by Parent or a Parent Subsidiary for the purpose of making derivative works or (C) redistributing any Software owned by Parent or a Parent Subsidiary at no or minimal charge.

(j) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, no current or former director, officer or employee of Parent (or any of its predecessors in interest) will, after giving effect to the Transactions, own or retain any rights to use any of the Parent Owned Intellectual Property.

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(k) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, (i) all Software, Technology, systems, servers, computers, hardware, firmware, middleware, networks, data communications lines, routers, hubs, switches and other information technology equipment owned by Parent or used in the operation of the business of Parent and the Parent Subsidiaries as currently conducted (collectively, the “Parent IT Assets”) are reasonably adequate for, and operate and perform in accordance with their documentation and functional specifications and otherwise as required in connection with, the operation of such business and (ii) Parent and the Parent Subsidiaries have implemented commercially reasonable backup, security and disaster recovery procedures consistent with industry practices, and, to the knowledge of Parent, during the three years prior to the date of this Agreement, no Person has gained unauthorized access to any Parent IT Assets and there has been no material failure of any Parent IT Asset.

(l) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, Parent and each Parent Subsidiary have established and maintained commercially reasonable privacy policies and have been in compliance with (i) such policies and (ii) (A) Contracts and (B) all applicable federal, state, local and foreign Laws relating to privacy, data protection, data security, export, and the collection, use, disclosure, retention, security and processing of Personal Information gathered, used, processed, held for use or accessed in the course of the operations of their respective businesses. No claims or investigations have been asserted or to the knowledge of Parent, threatened against Parent or any Parent Subsidiary alleging a violation of any Law or Contract relating to a Person’s privacy, Personal Information or data rights. The consummation of the Transactions will not breach or otherwise cause any violation of any Contract or policy of Parent or any Parent Subsidiary related to the privacy or data security of the Personal Information gathered, used, held for use or accessed on, or on behalf of, Parent or any Parent Subsidiary in the conduct of their respective businesses. Parent and each Parent Subsidiary have not notified in writing, or been required by applicable Law or Contract to notify in writing, any Person of any privacy or technology security incidents.

(m) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, (i) Parent and each Parent Subsidiary have implemented commercially reasonable security regarding (A) the collection, use, disclosure, retention, processing, transfer, confidentiality, integrity and availability of Personal Information collected, owned, controlled or held by Parent or any Parent Subsidiary, and (B) the integrity and availability of any information or operational technology systems, or Software applications used by or on behalf of Parent or any Parent Subsidiary, (ii) there has not been any loss, damage, or unauthorized disclosure, use of, or access to any Personal Information or Intellectual Property in the possession, custody or control of Parent or any Parent Subsidiary, and (iii) there has been no security incident that has compromised the integrity or availability of the information technology system, operational technology system or Software applications used, owned or operated by Parent or any Parent Subsidiary.

Section 5.19 Contracts. Each Contract that would be required to be filed as an exhibit to any Parent SEC Document (as described in Items 601(b)(4) and 601(b)(10) of Regulation S-K under the Securities Act) has been filed as an exhibit to or incorporated by reference in the Parent SEC Documents filed prior to the date of this Agreement (each, a “Parent Contract”). Subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar Laws of general applicability relating to or affecting creditors’ rights and to general equity principles, each Parent Contract is a valid and binding agreement of Parent or a Parent Subsidiary, as the case may be, and is in full force and effect. None of Parent, any Parent Subsidiary or, to the knowledge of Parent, any other party thereto is in default or breach in any material respect under the terms of any such Parent Contract. To the knowledge of Parent, as of the date hereof, no Person is seeking to terminate or challenging the validity or enforceability of any Parent Contract.

Section 5.20 Suppliers. Section 5.20 of the Parent Disclosure Letter sets forth a true and complete list of the ten largest (measured by gross expenditures by Parent and the Parent Subsidiaries on a consolidated basis)

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suppliers (each, a “Parent Material Supplier”) to Parent and the Parent Subsidiaries for the period from January 1, 2019 to the date hereof. No Parent Material Supplier has terminated or cancelled in writing, or delivered written notification to Parent or any of the Parent Subsidiaries that it intends to terminate or cancel, or decreased materially or, to the knowledge of Parent, threatened to decrease or limit materially, its relationship with Parent or any of the Parent Subsidiaries. Since January 1, 2017, (a) neither Parent nor any Parent Subsidiary has been engaged adversely in a Proceeding with any Parent Material Supplier and (b) there has been no change in the pricing or other terms under any Contract with any Parent Material Supplier that is material and adverse to Parent and the Parent Subsidiaries, taken as a whole.

Section 5.21 Environmental Laws and Regulations. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, Parent and each Parent Subsidiary is in compliance, and since January 1, 2017 has complied, with all applicable Environmental Laws and has obtained and is in compliance with all Environmental Permits. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, (a) no notice of violation, notification of liability, demand, request for information, citation, summons or Order relating to or arising out of any Environmental Law has been received by Parent or any Parent Subsidiary, and (b) no complaint has been filed, no penalty or fine has been assessed or, to the knowledge of Parent, is threatened and no Proceeding is pending or, to the knowledge of Parent, threatened by any Person involving Parent or any Parent Subsidiary, relating to or arising out of any Environmental Law. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, to the knowledge of Parent, no Release or threatened Release of Hazardous Substances has occurred at, on, above, under or from any properties currently or formerly owned, leased, operated or used by Parent or any Parent Subsidiary that, in each case, has resulted in or would reasonably be expected to result in any material cost, liability or obligation of Parent or any Parent Subsidiary under any Environmental Law. Parent has made available to the Company all environmental site assessments, audits, reports, investigations and studies generated since January 1, 2017 and in the possession, custody or control of Parent or any Parent Subsidiary relating to properties or assets currently or formerly owned, leased, operated or used by Parent or any Parent Subsidiary or otherwise relating to Parent’s or any Parent Subsidiary’s compliance with Environmental Laws.

Section 5.22 Insurance. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, Parent and the Parent Subsidiaries maintain insurance coverage with reputable insurers in such amounts and covering such risks as Parent reasonably believes, based on past experience, is adequate for the businesses and operations of Parent and the Parent Subsidiaries (taking into account the cost and availability of such insurance). Neither Parent nor any Parent Subsidiary has received any written notice of any pending or threatened cancellation (other than in connection with ordinary renewals) or material premium increase (other than premium increases in the ordinary course) with respect to any such material insurance policy, and each Parent Subsidiary is in compliance with all conditions contained therein, except for such noncompliance as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, (a) all such material insurance policies are in full force and effect and (b) will not be affected by, or terminated or lapse by reason of, this Agreement or the consummation of the Merger. There is no material claim pending under any of Parent’s insurance policies as to which coverage has been denied by the underwriters of such policies.

Section 5.23 Foreign Corrupt Practices Act and International Trade Sanctions. Neither Parent, any Parent Subsidiary nor any of their respective directors or officers, nor, to the knowledge of Parent, any of their respective agents or employees or any other Persons acting on their behalf has, in connection with the operation of their respective businesses, (a) made, promised, offered or authorized any direct or indirect unlawful contributions, payments, gifts, entertainment or any unlawful expenditures relating to political activity to government officials, candidates or members of political parties or organizations, or any other Person, or established or maintained any unlawful or unrecorded funds in violation of Anti-Corruption Laws, (b) taken any action in violation of Anti-Corruption Laws, or (c) in the past five years violated, operated in noncompliance

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with, or engaged in any conduct sanctionable under, any applicable Sanctions. Neither Parent, nor any Parent Subsidiary, nor any of their respective directors, officers, agents, employees or any other Persons acting on their behalf is a Person that is the subject or target of Sanctions, or owned or controlled by such a Person. Parent and each Parent Subsidiary has conducted their businesses in all material respects in compliance with Anti-Corruption Laws and has instituted and maintains in effect policies and procedures designed to ensure compliance by Parent, its Subsidiaries, and their respective directors, officers, employees and agents with applicable Anti-Corruption Laws.

Section 5.24 Opinion of Financial Advisor. The Board of Directors of Parent has received a written opinion or an oral opinion to be subsequently confirmed in writing from SVB Leerink LLC (the “Parent Financial Advisor”), dated as of October 1, 2019, to the effect that, as of the date of such opinion and subject to the assumptions, limitations, qualifications and conditions set forth therein, the Exchange Ratio is fair, from a financial point of view, to Parent. Promptly after the execution of this Agreement, Parent will furnish to the Company, solely for informational purposes, a true and complete copy of the written opinion of the Parent Financial Advisor.

Section 5.25 Brokers. No Person other than the Parent Financial Advisor is entitled to any brokerage, financial advisory, finder’s or similar fee or commission payable by Parent in connection with the Transactions based upon arrangements made by or on behalf of Parent.

Section 5.26 Transactions with Affiliates. To the knowledge of Parent and as of the date of this Agreement, since January 1, 2017, there have been no transactions, or series of related transactions, agreements, arrangements or understandings in effect, nor are there any currently proposed transactions, or series of related transactions, agreements, arrangements or understandings, that would be required to be disclosed under Item 404(a) of Regulation S-K that have not been otherwise disclosed in Parent SEC Documents filed prior to the date hereof.

Section 5.27 Non-Reliance on Company Estimates. The Company has made available to Parent and Merger Sub, and may continue to make available, estimates, projections and other forecasts for the business of the Company and the Company Subsidiaries and plan and budget information. Each of Parent and Merger Sub acknowledges that these estimates, projections, forecasts, plans and budgets and the assumptions on which they are based were prepared for specific purposes and may vary significantly from each other. Further, each of Parent and Merger Sub acknowledges that there are uncertainties inherent in attempting to make such estimates, projections, forecasts, plans and budgets, that Parent and Merger Sub are taking full responsibility for making their own evaluation of the adequacy and accuracy of all estimates, projections, forecasts, plans and budgets so furnished to them (including the reasonableness of the assumptions underlying such estimates, projections, forecasts, plans and budgets), and, except to the extent expressly set forth in the representations and warranties made pursuant to Article IV, that neither Parent nor Merger Sub is relying on any estimates, projections, forecasts, plans or budgets furnished by the Company, any Company Subsidiaries or their respective Affiliates and Representatives, and neither Parent nor Merger Sub shall, and shall cause its Affiliates and their respective Representatives not to, hold any such Person liable with respect thereto. Nothing herein shall limit Parent’s or the Parent Subsidiaries’ remedies in the case of fraud in connection with the negotiation or execution of this Agreement.

Section 5.28 No Additional Representations. Each of Parent and Merger Sub acknowledges and agrees that except for the representations and warranties made by the Company in Article IV, neither the Company nor any other Person makes any other express or implied representation or warranty with respect to the Company or its business, operations, assets, liabilities, condition (financial or otherwise) or prospects, notwithstanding the delivery or disclosure to Parent, Merger Sub or any of their respective Affiliates or Representatives of any documentation, forecasts or other information with respect to any one or more of the foregoing.

ARTICLE VI

COVENANTS RELATING TO CONDUCT OF BUSINESS

Section 6.1 Covenants of the Company. From the date of this Agreement until the earlier of the Effective Time and the termination of this Agreement pursuant to [Section 9.1](#), unless Parent shall otherwise consent in writing (which consent shall not be unreasonably withheld, conditioned or delayed) or except as set forth in [Section 6.1](#) of the Company Disclosure Letter, except as required by applicable Law or as otherwise expressly provided for in this Agreement, the Company shall, and shall cause each of the Company Subsidiaries to, conduct its business in the ordinary course of business, and shall use its commercially reasonable efforts to preserve intact its business organization and goodwill and relationships with all Governmental Entities, Self-Regulatory Organizations, providers of order flow, customers, suppliers, licensors, licensees, distributors, business associates and others having business dealings with it, to keep available the services of its current officers and key employees and to maintain its current rights and franchises, in each case, consistent with the Company's past practice. In addition to and without limiting the generality of the foregoing, except as expressly set forth in [Section 6.1](#) of the Company Disclosure Letter or as otherwise expressly provided for in this Agreement or as required by applicable Law, from the date hereof until the earlier of the Effective Time and the termination of this Agreement pursuant to [Section 9.1](#), without the prior written consent of Parent (which consent shall not be unreasonably withheld, conditioned or delayed), the Company shall not, and shall not permit any Company Subsidiary to, directly or indirectly:

(a) amend or modify any of its Constituent Documents;

(b) (i) declare, set aside, make or pay any dividend or other distribution (whether in cash, stock or property) in respect of any of its Securities, other than dividends or distributions by wholly-owned Company Subsidiaries to the Company or a wholly-owned Company Subsidiary, (ii) split, subdivide, consolidate, combine or reclassify any of its Securities or issue or allot, or propose or authorize the issuance or allotment of, any other Securities or Equity Rights in respect of, in lieu of, or in substitution for, any of its Securities or (iii) repurchase, redeem or otherwise acquire any Securities or Equity Rights of the Company or any Company Subsidiary, other than (A) the acquisition or withholding by the Company of shares of Company Common Stock in connection with the surrender of shares of Company Common Stock by holders of Company Stock Options in order to pay the exercise price thereof, (B) the acquisition or withholding of shares of Company Common Stock to satisfy Tax obligations with respect to awards granted pursuant to the Company Stock Plans and (C) the acquisition by the Company of any restricted shares in connection with the forfeiture of such awards;

(c) issue, allot, sell, grant, pledge or otherwise encumber any Securities or Equity Rights, other than issuances of: (i) shares of Company Common Stock in connection with the exercise of Company Stock Options issued prior to the date of this Agreement pursuant to the Company Stock Plans in accordance with their terms as in effect on the date of this Agreement and (ii) any Securities of any Company Subsidiaries to the Company or any other wholly-owned Company Subsidiary;

(d) (i) merge or consolidate with any Person, or acquire the Securities in, or any material amount of assets of, any other Person, other than (A) transactions solely among the Company and one or more of its wholly-owned Subsidiaries or solely among the Company's wholly-owned Subsidiaries or (B) acquisitions of inventory or equipment in the ordinary course of business, or (ii) adopt or implement a plan of complete or partial liquidation or resolution providing for or authorizing such liquidation or a dissolution, restructuring, recapitalization or other reorganization of the Company or any of the Company Subsidiaries (other than the dissolution of any inactive Company Subsidiary and reorganizations solely among Company Subsidiaries);

(e) sell, lease, license, subject to a Lien (other than a Permitted Lien), encumber or otherwise surrender, relinquish or dispose of any assets, property or rights owned or held by the Company or any Company Subsidiary (including Securities of a Company Subsidiary) except (i) (A) pursuant to the terms of a Contract of the

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Company in effect as of the date of this Agreement (a copy of which has been made available, or the terms of such oral Contract have been disclosed in writing, to Parent prior to the date hereof), other than if the sale, lease, license, Lien, encumbrance, surrender, relinquishment or disposition would be, individually or in the aggregate, material and adverse to the Company or any of the Company Subsidiaries, or (B) any Contract of the Company entered into after the date hereof in accordance with [Section 6.1\(k\)](#), (ii) sales or dispositions of inventory or tangible personal property in the ordinary course of business, (iii) transactions solely among the Company and one or more of its wholly-owned Subsidiaries or solely among the Company's wholly-owned Subsidiaries or (iv) non-exclusive licenses of Intellectual Property granted in the ordinary course of business;

(f) (i) make any loans, advances or capital contributions to, or investments in, any other Person other than by the Company or any wholly-owned Company Subsidiary to or in the Company or any wholly-owned Company Subsidiary, (ii) create, incur, guarantee, assume or otherwise become liable for any Indebtedness, issuances of debt securities, guarantees, loans or advances not in existence as of the date of this Agreement, or (iii) make or commit to make any capital expenditure other than as set forth in the Company's capital budget set forth in [Section 6.1\(f\)\(iii\)](#) of the Company Disclosure Letter;

(g) except as required under applicable Law or the terms of any Company Benefit Plan existing as of the date hereof, (i) pay any bonus or increase in any manner the compensation, bonus, pension, welfare, fringe or other benefits, severance or termination pay of any of the current or former directors, officers, employees or consultants of the Company or any of the Company Subsidiaries, other than increases in base salary to any such individuals who are not directors or officers of the Company or any Company Subsidiary in the ordinary course of business consistent with past practice that do not exceed 4% individually or 3% in the aggregate, (ii) become a party to, establish, amend, commence participation in, terminate or commit itself to the adoption of any stock option plan or other stock-based compensation plan, or any compensation, severance, retention, pension, retirement, profit-sharing, welfare benefit, or other employee benefit plan or agreement with or for the benefit of any current or former directors, officers, employees or consultants of the Company or any of the Company Subsidiaries (or newly hired employees), (iii) accelerate the vesting of or lapsing of restrictions with respect to any stock-based compensation or other long-term incentive compensation under any Company Benefit Plan, (iv) grant any new awards under any Company Benefit Plan, (v) amend or modify any outstanding award under any Company Benefit Plan, (vi) cause the funding of any rabbi trust or similar arrangement or take any action to fund or in any other way secure the payment of compensation or benefits under any Company Benefit Plan, (vii) enter into, amend or terminate any collective bargaining agreement or other agreement with a labor union, works council or similar organization, (viii) materially change any actuarial or other assumptions used to calculate funding obligations with respect to any Company Benefit Plan that is required by applicable Law to be funded or change the manner in which contributions to such plans are made or the basis on which such contributions are determined, except as may be required by GAAP or applicable Law, (ix) forgive any loans, or issue any loans (other than routine advances issued in the ordinary course of business) to any of the Company's or the Company Subsidiaries' directors, officers, contractors or employees, or (x) hire or engage any new employee or consultant or terminate the employment or engagement, other than for cause, of any employee or consultant if such employee or consultant will receive, or has received, annual base compensation in excess of \$125,000;

(h) (i) settle or compromise any Proceeding solely for monetary damages if the amount to be paid, waived, released or assigned by the Company or any of the Company Subsidiaries, exclusive of amounts covered by insurance, exceeds as to any such Proceeding \$1,000,000 or as to all such Proceedings in the aggregate \$3,000,000 or (ii) enter into any consent decree, injunction or similar restraint or form of equitable relief in settlement of any Proceeding, and, in each case, that includes any admission of wrongdoing or criminal act, and which does not provide for a general release of all claims against the Company and its controlled Affiliates;

(i) (i) make, revoke or amend any material election relating to Taxes, (ii) settle or compromise any Proceeding relating to Taxes, (iii) make a request for a written ruling of a Taxing Authority relating to Taxes, other than any request for a determination concerning qualified status of any Company Benefit Plan intended to

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be qualified under Section 401(a) of the Code, (iv) enter into a written and legally binding agreement with a Taxing Authority relating to material Taxes, (v) except as required by Law, change any of its methods, policies or practices of reporting income or deductions for U.S. federal income Tax purposes from those employed in the preparation of its U.S. federal income Tax Returns for the taxable year ended December 31, 2018, (vi) consent to any extension or waiver of the limitation period applicable to any material Tax claim or assessment or (vii) file any material amended Tax Return or (viii) incur any liability for Taxes other than in the ordinary course of business;

(j) take any action, cause any action to be taken, fail to take any action or fail to cause any action to be taken (including any action or failure to act otherwise permitted by this Section 6.1) that would prevent the Merger from constituting a Tax-free reorganization under Section 368(a) and related provisions of the Code;

(k) (i) modify or amend in any material respect, transfer, novate, assign or terminate, waive any rights under, any Company Contract, (ii) enter into any successor agreement to an expiring Company Contract that changes the terms of the expiring Company Contract in a way that is materially adverse to the Company and the Company Subsidiaries, taken as a whole, or (iii) except in the ordinary course of business consistent with past practice, enter into any new Contract that would have been considered a Company Contract if it were entered into at or prior to the date hereof;

(l) change any method of accounting or accounting principles or practices by the Company or any Company Subsidiary, except for any such change required by a change in GAAP, required by applicable Law or required by a Governmental Entity;

(m) terminate or cancel, or amend or modify in any material respect, any material insurance policies maintained by it covering the Company or any Company Subsidiary or their respective properties which is not replaced by a comparable amount of insurance coverage;

(n) (i) transfer, abandon, allow to lapse, or otherwise dispose of any rights to any Covered Product IP (to the extent Company or any Company Subsidiary has control over such actions, including pursuant to any Contract to which Company or any Company Subsidiary is a party) or material Company Owned Intellectual Property that is subject to a registration or application with a Governmental Entity, except for abandonment of provisional Patent applications or expiration of such Company Owned Intellectual Property in accordance with the applicable statutory period, or (ii) disclose any material Trade Secrets to any Person other than Parent or its Representatives, except under confidentiality agreements in the ordinary course of business;

(o) voluntarily terminate, suspend, abrogate, amend or modify any Company Permit in a manner materially adverse to the Company and the Company Subsidiaries, taken as a whole;

(p) (i) commence any clinical trial in respect of any pharmaceutical product if commencing such trial would require the Company to pay in funds in excess of \$1,000,000, or (ii) enter into any new line of business that is material to the Company and the Company Subsidiaries, taken as a whole; or

(q) authorize, or agree or commit to do, any of the foregoing.

Section 6.2 Covenants of Parent. From the date of this Agreement until the earlier of the Effective Time and the termination of this Agreement pursuant to Section 9.1, unless the Company shall otherwise consent in writing (which consent shall not be unreasonably withheld, conditioned or delayed) or except as set forth in Section 6.2 of the Parent Disclosure Letter, except as required by applicable Law or as otherwise expressly provided for in this Agreement, Parent shall, and shall cause each of the Parent Subsidiaries to, conduct its business in the ordinary course of business, and shall use its commercially reasonable efforts to preserve intact its business organization and goodwill and relationships with all Governmental Entities, Self-Regulatory Organizations, providers of order flow, customers, suppliers, licensors, licensees, distributors, business associates

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and others having business dealings with it, to keep available the services of its current officers and key employees and to maintain its current rights and franchises, in each case, consistent with Parent's past practice. In addition to and without limiting the generality of the foregoing, except as expressly set forth in Section 6.2 of the Parent Disclosure Letter or as otherwise expressly provided for in this Agreement or as required by applicable Law, from the date hereof until the earlier of the Effective Time and the termination of this Agreement pursuant to Section 9.1, without the prior written consent of the Company (which consent shall not be unreasonably withheld, conditioned or delayed), Parent shall not, and shall not permit any Parent Subsidiary to, directly or indirectly:

(a) amend or modify any of its Constituent Documents;

(b) (i) declare, set aside, make or pay any dividend or other distribution (whether in cash, stock or property) in respect of any of its Securities, other than dividends or distributions by wholly-owned Parent Subsidiaries to Parent or a wholly-owned Parent Subsidiary, (ii) split, subdivide, consolidate, combine or reclassify any of its Securities or issue or allot, or propose or authorize the issuance or allotment of, any other Securities or Equity Rights in respect of, in lieu of, or in substitution for, any of its Securities or (iii) repurchase, redeem or otherwise acquire any Securities or Equity Rights of Parent or any Parent Subsidiary, other than (A) the acquisition or withholding by Parent of shares of Parent Common Stock in connection with the surrender of shares of Parent Common Stock by holders of Equity Rights in order to pay the exercise price thereof, (B) the acquisition or withholding of shares of Parent Common Stock to satisfy Tax obligations with respect to awards granted pursuant to the Parent Stock Plans and (C) the acquisition by Parent of any restricted shares in connection with the forfeiture of such awards;

(c) issue, allot, sell, award, grant, pledge or otherwise encumber any Securities or Equity Rights, other than issuances of (i) Parent Common Stock in connection with Parent Equity Awards issued prior to the date of this Agreement pursuant to the Parent Stock Plans in accordance with their terms as in effect on the date of this Agreement, (ii) Equity Rights under the Parent Stock Plans to any newly hired or promoted employees or to employees for retention purposes or to employees as part of the annual equity grant cycle, in each case, in the ordinary course of business consistent with past practice and (iii) any Securities of any Parent Subsidiary to Parent or any other wholly-owned Parent Subsidiary;

(d) (i) merge or consolidate with any Person, or acquire the Securities in, or any material amount of assets of, any other Person other than (A) transactions solely among Parent and one or more of its wholly-owned Subsidiaries or solely among Parent's wholly-owned Subsidiaries or (B) acquisitions of inventory or equipment in the ordinary course of business, or (ii) adopt or implement a plan of complete or partial liquidation or resolution providing for or authorizing such liquidation or a dissolution, restructuring, recapitalization or other reorganization of Parent or any of the Parent Subsidiaries (other than the dissolution of any inactive Parent Subsidiary and reorganizations solely among Parent Subsidiaries);

(e) (i) make, revoke or amend any material election relating to Taxes, (ii) settle or compromise any Proceeding relating to Taxes, (iii) make a request for a written ruling of a Taxing Authority relating to Taxes, other than any request for a determination concerning qualified status of any Parent Benefit Plan intended to be qualified under Section 401(a) of the Code, (iv) enter into a written and legally binding agreement with a Taxing Authority relating to material Taxes (v) except as required by Law, change any of its methods, policies or practices of reporting income or deductions for U.S. federal income Tax purposes from those employed in the preparation of its U.S. federal income Tax Returns for the taxable year ended December 31, 2018, (vi) consent to any extension or waiver of the limitation period applicable to any material Tax claim or assessment, (vii) file any material amended Tax Return or (viii) incur any liability for Taxes other than in the ordinary course of business;

(f) take any action, cause any action to be taken, fail to take any action or fail to cause any action to be taken (including any action or failure to act otherwise permitted by this Section 6.2) that would prevent the Merger from constituting a Tax-free reorganization under Section 368(a) and related provisions of the Code;

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(g) change any method of accounting or accounting principles or practices by the Parent or any Parent Subsidiary, except for any such change required by a change in GAAP, required by applicable Law or required by a Governmental Entity

(h) (i) transfer, abandon, allow to lapse, or otherwise finally dispose of any rights to any material Parent Owned Intellectual Property, except for abandonment of provisional Patent applications or expiration of Parent Owned Intellectual Property that is subject to a registration with a Governmental Entity in accordance with the applicable statutory period, or (ii) disclose any material Trade Secrets of the Parent or any Parent Subsidiary to any Person other than the Company or its Representatives, except under confidentiality agreements in the ordinary course of business; or

(i) authorize, or agree or commit to do, any of the foregoing.

Section 6.3 No Control. Nothing contained in this Agreement shall give Parent or the Company, directly or indirectly, the right to control or direct the other Party's operations prior to the Effective Time. Prior to the Effective Time, each Party will exercise, consistent with the terms and conditions of this Agreement, complete control and supervision over its and its Subsidiaries' respective operations.

ARTICLE VII

ADDITIONAL AGREEMENTS

Section 7.1 Preparation and Mailing of Joint Proxy Statement/Prospectus.

(a) As promptly as reasonably practicable following the date hereof (i) Parent and the Company shall prepare proxy materials relating to the Company Stockholders Meeting and the Parent Stockholders Meeting (together with all amendments and supplements thereto, the "Joint Proxy Statement/Prospectus") and (ii) Parent shall prepare and file with the SEC the Form S-4, in which the Joint Proxy Statement/Prospectus will be included. The Joint Proxy Statement/Prospectus will be included in and will constitute a part of the Form S-4 as Parent's prospectus. The Form S-4 and the Joint Proxy Statement/Prospectus shall comply as to form in all material respects with the applicable provisions of the Securities Act and the Exchange Act. Each of the Company and Parent shall furnish all information concerning such Person and its Affiliates to the other, and provide such other assistance, as may be reasonably requested in connection with the preparation, filing and distribution of the Form S-4 and Joint Proxy Statement/Prospectus, and the Form S-4 and Joint Proxy Statement/Prospectus shall include all information reasonably requested by such other party to be included therein. All filings by the Company with the SEC in connection with the Transactions and all mailings to the Company's stockholders in connection with the Transactions shall be subject to the reasonable prior review and comment by Parent. All filings by Parent with the SEC in connection with the Transactions, including the Form S-4, and all mailings to the Parent stockholders in connection with the Transactions shall be subject to the reasonable prior review and comment by the Company. Each of Parent and the Company shall use commercially reasonable efforts to cause the Form S-4 and the Joint Proxy Statement/Prospectus to comply with the rules and regulations promulgated thereunder by the SEC.

(b) Each of the Company and Parent shall use its reasonable best efforts to have the Joint Proxy Statement/Prospectus cleared by the SEC as promptly as practicable after its filing, and Parent shall use its reasonable best efforts to have the Form S-4 declared effective under the Securities Act as promptly as practicable after its filing and keep the Form S-4 effective for so long as necessary to consummate the Transactions.

(c) Each of Parent and the Company shall, as promptly as practicable after receipt thereof, provide the other Parties copies of any written comments and advise the other Parties of any oral comments, with respect to

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the Joint Proxy Statement/Prospectus or the Form S-4 received from the SEC. Parent shall provide the Company with a reasonable opportunity to review and comment on any amendment or supplement to the Form S-4 and any communications prior to filing such with the SEC and will promptly provide the Company with a copy of all such filings and communications made with the SEC.

(d) The Company shall cause the Joint Proxy Statement/Prospectus to be mailed to its stockholders at the earliest reasonable practicable time after the Form S-4 is declared effective under the Securities Act. Parent shall cause the Joint Proxy Statement/Prospectus to be mailed to its stockholders at the earliest reasonable practicable time after the Form S-4 is declared effective under the Securities Act. Each Party will advise the other Parties, promptly after it receives notice thereof, of the time when the Form S-4 has become effective, the issuance of any stop order, the suspension of the qualification of Parent Common Stock issuable in connection with the Merger for offering or sale in any jurisdiction, or any request by the SEC for amendment of the Joint Proxy Statement/Prospectus or the Form S-4.

(e) If at any time prior to the Effective Time, (i) any event or change occurs (including, in the case of the Company, a Change in Recommendation or receipt of a Takeover Proposal or, in the case of Parent, a Parent Change in Recommendation or receipt of a Parent Takeover Proposal) with respect to the Parties or any of their respective Affiliates, officers or directors, which, in accordance with applicable Law, should be set forth in an amendment of, or supplement to, the Form S-4 or the Joint Proxy Statement/Prospectus or (ii) any information relating to the Parties, or any of their respective Affiliates, officers or directors, should be discovered by any of the Parties which should be set forth in an amendment or supplement to the Form S-4 or the Joint Proxy Statement/Prospectus so that, in any such case, any such document would not include any misstatement of a material fact or omit to state any material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, the Parties shall file as promptly as reasonably practicable with the SEC a mutually acceptable (acting reasonably) amendment of, or supplement to, the Form S-4 or the Joint Proxy Statement/Prospectus and, to the extent required by Law, disseminate the information contained in such amendment or supplement to the stockholders of the Parties.

Section 7.2 Stockholder Meetings.

(a) As promptly as reasonably practicable after the Form S-4 is declared effective (and, in the case of clause (iii), within 40 days of the Company Record Date), the Company shall, in consultation with Parent, in accordance with applicable Law, the rules of any applicable Self-Regulatory Organization and the Company's Constituent Documents, (i) establish a record date (the "Company Record Date") for, duly call and give notice of a meeting of the stockholders of the Company (the "Company Stockholders Meeting") for the purpose of obtaining the Company Stockholder Approval (and will use reasonable best efforts to conduct "broker searches" in a manner to enable the Company Record Date to be held promptly following the effectiveness of the Form S-4), (ii) cause the Joint Proxy Statement/Prospectus (and all other proxy materials for the Company Stockholders Meeting) to be mailed to its stockholders and (iii) duly convene and hold the Company Stockholders Meeting. Subject to Section 7.5(d) (Company No Solicitation), the Company shall take, or cause to be taken, all actions, and do or cause to be done all things, necessary, proper or advisable on its part to cause the Company Stockholder Approval to be received at the Company Stockholders Meeting or any adjournment, postponement or delay thereof, and shall comply with all legal requirements applicable to the Company Stockholders Meeting. The Company shall not, without the prior written consent of Parent (such consent not to be unreasonably withheld, conditioned or delayed), adjourn, postpone or otherwise delay the Company Stockholders Meeting; provided that the Company may, notwithstanding the foregoing, without the prior written consent of Parent, adjourn, postpone or otherwise delay the Company Stockholders Meeting (A) if, after consultation with Parent, the Company believes in good faith that such adjournment, postponement or delay is reasonably necessary to allow reasonable additional time to (1) solicit additional proxies necessary to obtain the Company Stockholder Approval, or (2) distribute any supplement or amendment to the Joint Proxy Statement/Prospectus that the Board of Directors of the Company has determined in good faith after consultation with outside legal counsel is necessary under applicable Law and for such supplement or amendment to be reviewed

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by the Company's stockholders prior to the Company Stockholders Meeting, (B) for an absence of a quorum or (C) if the Parent Stockholders Meeting has been adjourned, postponed or otherwise delayed by Parent in accordance with Section 7.2(b), to the extent necessary to enable the Company Stockholders Meeting and the Parent Stockholders Meeting to be held within a single period of 24 consecutive hours as contemplated by Section 7.2(d). Notwithstanding the foregoing, the Company may not, without the prior written consent of Parent (such consent not to be unreasonably withheld, conditioned or delayed), adjourn, postpone or otherwise delay the Company Stockholders Meeting more than a total of three times pursuant to clause (A)(1) or (B) of the immediately preceding sentence, and no such postponement, adjournment or delay pursuant to clause (A)(1) or (B) of the immediately preceding sentence shall be, without the prior written consent of Parent (such consent not to be unreasonably withheld, conditioned or delayed), for a period exceeding 10 Business Days. Without the prior written consent of Parent (such consent not to be unreasonably withheld, conditioned or delayed), the adoption of this Agreement shall be the only matter (other than a proposal relating to executive compensation as required by applicable Law and an adjournment proposal) that the Company shall propose to be acted on by the stockholders of the Company at the Company Stockholders Meeting. Subject to Section 7.5(d), neither the Board of Directors of the Company nor any committee thereof, shall (x) withdraw or qualify (or amend or modify in a manner adverse to Parent) or publicly propose to withdraw or qualify (or amend or modify in a manner adverse to Parent), the Company Recommendation, (y) take any public action or make any public statement in connection with the Company Stockholders Meeting adverse to such Company Recommendation or (z) recommend, adopt, endorse or approve, or propose publicly to recommend, adopt, endorse or approve, any Takeover Proposal (any of the actions described in clauses (x), (y) or (z), a "Change in Recommendation"); provided that the Board of Directors of the Company may make a Change in Recommendation in accordance with Section 7.5(d) (Company No Solicitation); provided, further, that a determination by the Board of Directors of the Company that a Takeover Proposal constitutes a Superior Proposal in accordance with Section 7.5, that an Intervening Event has occurred in accordance with Section 7.5(d) or the delivery of any notices to Parent by the Company pursuant to Section 7.5(d) shall not, in and of itself, constitute a Change in Recommendation. Subject to Section 7.5(d), the Joint Proxy Statement/Prospectus shall include the Company Recommendation.

(b) As promptly as reasonably practicable after the Form S-4 is declared effective (and, in the case of clause (iii), within 40 days of the Company Record Date), Parent shall, in consultation with the Company, in accordance with applicable Law, the rules of any applicable Self-Regulatory Organization and Parent's Constituent Documents, (i) establish a record date (which date shall be the same as the Company Record Date) (the "Parent Record Date") for, duly call and give notice of a meeting of the stockholders of Parent (the "Parent Stockholders Meeting") for the purpose of obtaining the Parent Stockholder Approval (and will use reasonable best efforts to conduct "broker searches" in a manner to enable the Parent Record Date to be held on the same day as the Company Record Date), (ii) cause the Joint Proxy Statement/Prospectus (and all other proxy materials for the Parent Stockholders Meeting) to be mailed to its stockholders and (iii) duly convene and hold the Parent Stockholders Meeting. Subject to Section 7.19(d) (Parent No Solicitation), Parent shall take, or cause to be taken, all actions, and do or cause to be done all things, necessary, proper or advisable on its part to cause the Parent Stockholder Approval to be received at the Parent Stockholders Meeting or any adjournment, postponement or delay thereof, and shall comply with all legal requirements applicable to the Parent Stockholders Meeting. Parent shall not, without the prior written consent of the Company (such consent not to be unreasonably withheld conditioned or delayed), adjourn, postpone or otherwise delay the Parent Stockholders Meeting; provided that Parent may, notwithstanding the foregoing, without the prior written consent of the Company, adjourn, postpone or delay the Parent Stockholders Meeting (A) if, after consultation with the Company, Parent believes in good faith that such adjournment, postponement or delay is reasonably necessary to allow reasonable additional time to (1) solicit additional proxies necessary to obtain the Parent Stockholder Approval, or (2) distribute any supplement or amendment to the Joint Proxy Statement/Prospectus that the Board of Directors of Parent has determined in good faith after consultation with outside legal counsel is necessary under applicable Law and for such supplement or amendment to be reviewed by Parent's stockholders prior to the Parent Stockholders Meeting, (B) for an absence of a quorum or (C) if the Company Stockholders Meeting has been adjourned, postponed or otherwise delayed by the Company in accordance with Section 7.2(a), to the extent necessary to enable the Company Stockholders Meeting and the Parent Stockholders Meeting to be held within a single period

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of 24 consecutive hours as contemplated by Section 7.2(d). Notwithstanding the foregoing, Parent may not, without the prior written consent of the Company (such consent not to be unreasonably withheld, conditioned or delayed), adjourn, postpone or otherwise delay the Parent Stockholders Meeting more than a total of three times pursuant to clause (A)(1) or (B) of the immediately preceding sentence, and no such postponement, adjournment or delay pursuant to clause (A)(1) or (B) of the immediately preceding sentence shall be, without the prior written consent of the Company (such consent not to be unreasonably withheld, conditioned or delayed), for a period exceeding 10 Business Days. Without the prior written consent of the Company (such consent not to be unreasonably withheld conditioned or delayed), the issuance of Parent Common Stock in connection with the Merger shall be the only matter (other than matters of procedure and matters required by applicable Law to be voted on by Parent's stockholders in connection with this Agreement and the Transactions, including any adjournment proposal) that Parent shall propose to be acted on by the stockholders of Parent at the Parent Stockholders Meeting. Subject to Section 7.19(d), neither the Board of Directors of Parent nor any committee thereof, shall (x) withdraw or qualify (or amend or modify in a manner adverse to the Company) or publicly propose to withdraw or qualify (or amend or modify in a manner adverse to the Company), the Parent Recommendation, (y) take any public action or make any public statement in connection with the Parent Stockholders Meeting adverse to such Parent Recommendation or (z) recommend, adopt, endorse or approve, or propose publicly to recommend, adopt, endorse or approve, any Parent Takeover Proposal (any of the actions described in clauses (x), (y) or (z) a "Parent Change in Recommendation"); provided, that the Board of Directors of Parent may make a Parent Change in Recommendation in accordance with Section 7.19(d); provided, further, that a determination by the Board of Directors of Parent that a Parent Takeover Proposal constitutes a Parent Superior Proposal in accordance with Section 7.19, a Parent Intervening Event has occurred in accordance with Section 7.19(d) or the delivery of any notices to the Company by Parent pursuant to Section 7.19(d) shall not, in and of itself, constitute a Parent Change in Recommendation. Subject to Section 7.19(d), the Joint Proxy Statement/Prospectus shall include the Parent Recommendation.

(c) Notwithstanding (i) any Change in Recommendation or Parent Change in Recommendation, (ii) the public proposal or announcement or other submission to the Company or any of its Representatives of a Takeover Proposal, (iii) the public proposal or announcement or other submission to Parent or any of its Representatives of a Parent Takeover Proposal or (iv) anything in this Agreement to the contrary, unless this Agreement is terminated in accordance with its terms, the obligations of the Company and Parent under this Section 7.2 shall continue in full force and effect.

(d) Notwithstanding anything to the contrary herein, it is the intention of the parties that, and each of the parties shall reasonably cooperate and use their commercially reasonable efforts to cause, the date and time of the Company Stockholders Meeting and the Parent Stockholders Meeting to be coordinated such that they occur within a single period of 24 consecutive hours (and in any event as close in time as reasonably possible).

Section 7.3 Access to Information; Confidentiality.

(a) Prior to the earlier of the Effective Time and the termination of this Agreement in accordance with Section 9.1, upon reasonable notice, the Company shall, and shall cause the Company Subsidiaries to, afford to the officers, directors, employees, accountants, counsel, financial advisors, consultants, financing sources and other advisors or representatives (collectively, "Representatives") of Parent access during normal business hours to the Company's and the Company Subsidiaries' properties, books, records, Contracts and personnel and shall furnish, and shall cause to be furnished, as promptly as reasonably practicable to Parent all other information with respect to the Company as Parent may reasonably request.

(b) Notwithstanding anything to the contrary in this Section 7.3, none of the Company, Parent or any of their respective Subsidiaries shall be required to provide access to, disclose information to or assist or cooperate with the other party, in each case if such access, disclosure, assistance or cooperation (i) would, as reasonably determined based on the advice of outside counsel, jeopardize any attorney-client privilege with respect to such information, or (ii) would contravene any applicable Law or Contract to which the applicable party is a subject or

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bound; provided that the Company and Parent shall, and each shall cause its Subsidiaries to, use reasonable best efforts to make appropriate substitute disclosure arrangements under circumstances in which such restrictions apply (including redacting such information (A) to remove references concerning valuation, (B) as necessary to comply with any Contract in effect on the date hereof or after the date hereof and (C) as necessary to address reasonable attorney-client, work-product or other privilege or confidentiality concerns) and to provide such information as to the applicable matter as can be conveyed.

(c) The Company will use reasonable efforts to (i) continue to progress the Phase 3 CONDOR trial evaluating the diagnostic performance and clinical impact of PyL (18F-DCFPyL) to a readout of the top-line results and (ii) lock the main study databases for that trial by December 31, 2019. The main study databases shall contain information required to analyze the trial's primary efficacy endpoints. The Company will grant Parent and its Representatives unrestricted access to the main study databases once locked, and the Company will also share with Parent and its advisors results of primary efficacy endpoints analysis within five Business Days after the main study databases are locked. The Company will use reasonable efforts to provide Parent and its advisors with reasonable access and support from the trial's lead investigator, the contract research organization hosting the main database, the contract research organization in charge of statistical analysis of the primary endpoints and the imaging core laboratory responsible for performing the central review of medical images. The Company authorizes Parent to have performed an independent review and analysis of trials data contained in the main study databases by an independent statistician selected by Parent.

(d) All information furnished pursuant to this Section 7.3 shall be subject to the confidentiality agreement, dated as of July 15, 2019, by and between the Company and Parent (the "Confidentiality Agreement"). No investigation pursuant to this Section 7.3 shall affect the representations, warranties or conditions to the obligations of the Parties contained herein.

Section 7.4 Consents and Approvals.

(a) Subject to the terms and conditions of this Agreement, each of Parent and the Company will use its reasonable best efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary, proper or advisable under applicable Law to consummate the Transactions, including obtaining as promptly as reasonably practicable any necessary consents, approvals, waivers, licenses, permits, franchises, certificates, registrations, variances, exemptions and authorizations of, and actions or nonactions by, and making as promptly as practicable all necessary filings, submissions and declarations with, any Governmental Entity, Self-Regulatory Organization or other third party necessary in connection with the consummation of the Transactions. In furtherance and not in limitation of the foregoing, each of Parent and the Company shall (i) make or cause to be made the filings, submissions and declarations required of such party under the HSR Act and the Foreign Competition Laws with respect to the Transactions as promptly as practicable after the date of this Agreement (and in any event, in the case of the HSR Act, within 10 Business Days after the date of this Agreement), (ii) comply at the earliest practicable date with any request under the HSR Act for additional information, documents or other materials received by such party from the FTC, the Antitrust Division of the U.S. Department of Justice (the "Antitrust Division") or by any other Governmental Entity (including under any Foreign Competition Laws) in respect of such filings, submissions and declarations or the Transactions and (iii) act in good faith and reasonably cooperate with the other Party in connection with any such filings, submissions and declarations and in connection with resolving, and use reasonable best efforts to resolve, any investigation or other inquiry of any such agency or other Governmental Entity under any of the HSR Act, the Foreign Competition Laws, the Sherman Act, the Clayton Act and any other Laws or Orders that are designed to prohibit, restrict or regulate actions having the purpose or effect of monopolization or restraint of trade (collectively, the "Antitrust Laws") with respect to any such filings, submissions and declarations or any of the Transactions. In addition, from the date hereof, if the Transactions are subject to ISRA, the Company shall undertake all steps necessary to comply with the requirements of ISRA imposed on account of the execution of this Agreement and consummation of the Transactions, including making or causing to be made any filings required thereunder within five days of the date hereof. To the extent not prohibited by applicable Law, the

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Company, on the one hand, will provide Parent, and Parent, on the other hand, will provide the Company, with copies of any material correspondence, filing or communication between such Party or any of its Representatives, on the one hand, and any Governmental Entity or members of their respective staffs, on the other hand, with respect to this Agreement and the Transactions. Prior to submitting or making any such correspondence, filing or communication to any such Governmental Entity or members of their respective staffs, the Parties shall, to the extent permitted by applicable Law, first provide the other Party with a copy of such correspondence, filing or communication in draft form and give such other Party a reasonable opportunity to discuss its content before it is submitted or filed with the relevant Governmental Entities, and shall consider and take account of all reasonable comments timely made by the other Party with respect thereto. To the extent permitted by applicable Law, each of the Parties shall ensure that the other Party is given the opportunity to attend any meetings with or other appearances before any Governmental Entity with respect to the Transactions. Neither Party shall agree to any voluntary extension of any statutory deadline or waiting period or to any voluntary delay of the consummation of the Transactions at the behest of any Governmental Entity (including the Antitrust Division) without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed).

(b) For purposes of this Section 7.4, “reasonable best efforts” shall include, solely at Parent’s election, (i) vigorously defending, contesting and objecting to any Proceedings challenging this Agreement or the Transactions or that would otherwise prevent or materially impede, interfere with, hinder or delay the consummation of the Transactions, (ii) executing settlements, undertakings, consent decrees, stipulations or other agreements, (iii) selling, divesting, holding separate or otherwise conveying, or agreeing to sell, divest, hold separate or otherwise convey, any particular assets or categories of assets or businesses of Parent, any Parent Subsidiary, the Company or any Company Subsidiary, (iv) terminating, relinquishing, modifying or waiving, or agreeing to terminate, relinquish, modify or waive, existing relationships, ventures, contractual rights, obligations or other arrangements of Parent, any Parent Subsidiary, the Company or any Company Subsidiary, (v) creating, or agreeing to create, any relationships, ventures, contractual rights, obligations or other arrangements of Parent, any Parent Subsidiary, the Company or any Company Subsidiary, (vi) taking or committing to take actions that after the Closing Date would limit the freedom of action of Parent or its Affiliates (including the Surviving Corporation) with respect to, or its or their ability to retain, one or more of its or their businesses, product lines or assets and (vii) taking any other action as may be required by a Governmental Entity in order to (A) obtain all necessary consents, approvals, waivers, licenses, permits, franchises, certificates, registrations, variances, exemptions and authorizations of, and actions and non-actions by, any Governmental Entity or other third party as promptly as reasonably possible, but in any event before the Outside Date, or (B) effect the expiration or termination of any waiting period, which would otherwise have the effect of preventing or delaying the Closing beyond the Outside Date; provided, however, that no action contemplated by clauses (i) through (vii) may be taken if such action would bind Parent, any Parent Subsidiary, the Company or any Company Subsidiary if the Closing does not occur.

Section 7.5 Company No Solicitation.

(a) From the date hereof until the earlier of the Effective Time and the termination of this Agreement pursuant to Section 9.1, except as otherwise set forth in this Section 7.5, the Company shall not, nor shall it authorize or permit any of the Company Subsidiaries to, and the Company shall use reasonable best efforts to cause its and its Subsidiaries’ respective Representatives not to, directly or indirectly (i) initiate or solicit or knowingly facilitate, knowingly induce or knowingly encourage any inquiry or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, a Takeover Proposal, (ii) enter into, continue or otherwise participate in any discussions or negotiations regarding, furnish to any Person any information or data with respect to, or cooperate in any way that would otherwise reasonably be expected to lead to, any proposal or offer that constitutes, or would reasonably be expected to lead to, any Takeover Proposal, (iii) submit to the stockholders of the Company for their approval or adoption any Takeover Proposal or (iv) agree or publicly announce an intention to take any of the foregoing actions. Except as otherwise set forth in Section 7.5(d), the Board of Directors of the Company or any committee thereof shall not approve, declare advisable, adopt or

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recommend, or publicly propose to approve, declare advisable, adopt or recommend, or allow the Company or any Company Subsidiary to execute or enter into, any binding or non-binding letter of intent, agreement in principle, memorandum of understanding, merger agreement, acquisition agreement, option agreement, joint venture agreement, partnership agreement or other agreement contemplating or otherwise in connection with, or that is intended to or would reasonably be expected to lead to, any Takeover Proposal (other than confidentiality agreements permitted under Section 7.5(b)(i)) (an “Alternative Acquisition Agreement”). The Company shall, and the Company shall cause the Company Subsidiaries and shall use reasonable best efforts to cause its and their respective Representatives to, immediately cease and cause to be terminated any existing activities, discussions or negotiations with any Persons or their Representatives conducted prior to the date of this Agreement with respect to any Takeover Proposal and will request the prompt return or destruction of any confidential information previously furnished to such Persons in connection therewith and immediately terminate the access of each such Person and its Representatives to any electronic data room maintained by or on behalf of the Company or any of the Company Subsidiaries. Neither the Company nor any of the Company Subsidiaries shall modify, amend or terminate, or waive, release, fail to enforce or assign any provisions of, any confidentiality agreement (other than any standstill provision therein) to which it is a party relating to any Takeover Proposal or any inquiry, offer or proposal in connection therewith and shall enforce, to the fullest extent permitted under applicable Law, the provisions of any such agreement (other than any standstill provision therein). Without limiting the foregoing, any violation of the restrictions set forth in this Section 7.5 by any Representative of the Company or any of the Company Subsidiaries shall be deemed to be a breach of this Section 7.5 by the Company.

(b) Notwithstanding the foregoing, prior to receipt of the Company Stockholder Approval, the Company may, in response to a bona fide written Takeover Proposal that was first received after the date hereof, was unsolicited and did not result from a breach of Section 7.5(a):

(i) furnish information with respect to the Company and the Company Subsidiaries to the Person making such Takeover Proposal and its Representatives pursuant to and in accordance with a confidentiality agreement containing provisions no less restrictive in any substantive respect than those contained in the Confidentiality Agreement; provided that such confidentiality agreement need not contain a standstill provision; provided, further, that all such information provided to such Person has previously been provided to Parent or is provided to Parent prior to or substantially concurrently with (and in any event on the same calendar day as) the time it is provided to such Person; and

(ii) participate in discussions or negotiations with such Person or its Representatives regarding such Takeover Proposal;

provided, in each case, that the Board of Directors of the Company determines in good faith (after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation), that (i) after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation (it being understood that the Company Financial Advisor is a financial advisor of nationally recognized reputation), such Takeover Proposal is, or would reasonably be expected to lead to, a Superior Proposal and (ii) after consultation with its outside legal counsel, the failure to furnish such information or participate in such discussions or negotiations with respect to such Takeover Proposal would reasonably be expected to be inconsistent with its fiduciary duties under applicable Law.

(c) As promptly as reasonably practicable after the receipt, directly or indirectly, by the Company of any Takeover Proposal or any proposal, offer or inquiry with respect to, or that would reasonably be expected to lead to, any Takeover Proposal, and in any case within 24 hours after the receipt thereof, the Company shall provide oral and written notice to Parent of (i) such Takeover Proposal, proposal, offer or inquiry, (ii) the identity of the Person making any such Takeover Proposal, proposal, offer or inquiry and (iii) the economic and other material terms and conditions of any such Takeover Proposal, proposal, offer or inquiry (including an unredacted copy of all written materials provided by such Person to the Company in connection with such Takeover Proposal, proposal, offer or inquiry and any amendments or modifications thereto). The Company shall promptly

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(and in any event within 24 hours) keep Parent reasonably informed of any material developments with respect to any such Takeover Proposal, proposal, offer or inquiry (including any material changes thereto and copies of any additional written materials received by the Company, the Company Subsidiaries or their respective Representatives from the Person that submitted such Takeover Proposal or such proposal, offer or inquiry or such Person's Representatives).

(d) Except as provided in this Section 7.5(d), neither the Board of Directors of the Company nor any committee thereof shall, directly or indirectly, effect a Change in Recommendation. Notwithstanding the foregoing, at any time prior to receipt of the Company Stockholder Approval, the Board of Directors of the Company may, in response to a Superior Proposal (that has not been withdrawn) or an Intervening Event, effect a Change in Recommendation; provided that the Board of Directors of the Company determines in good faith (after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation) that the failure to do so would be inconsistent with its fiduciary duties under applicable Law; provided, further, that the Board of Directors of the Company may not effect such a Change in Recommendation unless:

(i) the Board of Directors of the Company shall have first provided four Business Days' prior written notice to Parent that it is prepared to effect a Change in Recommendation in response to a Superior Proposal or an Intervening Event (it being understood that delivery of such notice shall not in and of itself constitute a Change in Recommendation), which notice shall (A) in the case of a Superior Proposal, include the material terms and conditions of the Superior Proposal that is the basis of the proposed action of the Board of Directors of the Company (including the identity of the Person making such Superior Proposal and a written summary of any material terms and conditions communicated orally), and shall attach the most current unredacted version of the relevant Alternative Acquisition Agreement (if any) with the Person making such Superior Proposal and unredacted copies of any other documents evidencing or specifying any other terms and conditions of such Takeover Proposal received from, or provided by, the Person making such Superior Proposal and (B) in the case of an Intervening Event, state in reasonable detail the material facts underlying, and the rationale and basis for, the determination that an Intervening Event has occurred (it being understood and agreed that an amendment to the material terms of such Superior Proposal or a material change to the facts and circumstances that are the basis for such Intervening Event shall require an updated notice and a new three Business Day period pursuant to this clause (i) during which period the Company shall be required to comply with this Section 7.5(d) anew with respect to such additional notice);

(ii) during such four Business Day period, the Company and its Representatives, to the extent reasonably requested by Parent, engaged in good faith negotiations with Parent to amend this Agreement in such a manner (A) in the case of a Superior Proposal, that the Takeover Proposal ceases to constitute a Superior Proposal or (B) in the case of an Intervening Event, to obviate the need to effect a Change in Recommendation; and

(iii) after taking into account any revised terms offered in writing by Parent, the Board of Directors of the Company determines in good faith (A) in the case of a Superior Proposal, after consultation with its legal counsel and financial advisor, that such Takeover Proposal continues to constitute a Superior Proposal and (B) in the case of a Superior Proposal or Intervening Event, after consultation with its outside legal counsel, that the failure to make a Change in Recommendation would continue to be inconsistent with its fiduciary duties under applicable Law.

(e) Nothing contained in this Section 7.5 shall prohibit the Company from complying with Rule 14d-9, Rule 14e-2 or Item 1012(a) of Regulation M-A promulgated under the Exchange Act in respect of any Takeover Proposal or making any disclosure to the stockholders of the Company if the Board of Directors of the Company determines in good faith (after consultation with its outside legal counsel) that the failure to make such disclosure would reasonably be expected to be inconsistent with its fiduciary duties under applicable Law; provided, however, that any such action taken or statement made that relates to a Takeover Proposal shall not be deemed to be a Change in Recommendation if the Board of Directors of the Company reaffirms the Company

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Recommendation in such statement or in connection with such action; provided, further, that neither the Board of Directors of the Company nor any committee thereof shall, except as expressly permitted by Section 7.5(d) (Change in Recommendation), effect a Change in Recommendation.

(f) For purposes of this Agreement:

(i) “Intervening Event” means a Change that is material to the Company and the Company Subsidiaries, taken as a whole, which was not known by, or if known, the effect of which was not reasonably foreseeable by, the Board of Directors of the Company as of or prior to the date hereof (which Change does not relate to a Takeover Proposal), and which becomes known to the Board of Directors of the Company prior to the Company Stockholder Approval; provided, however that none of the following shall constitute, be deemed to contribute to or otherwise be taken into account in determining whether there has been an Intervening Event: (A) any changes in the market price or trading volume of Company Common Stock or Parent Common Stock, in and of itself; (B) the fact that, in and of itself, the Company or any of the Company Subsidiaries exceeds any internal or published projections, forecasts, estimates or predictions in respect of revenues, earnings or other financial or operating metrics for any period ending after the date of this Agreement (it being understood that the underlying facts giving rise or contributing to events described in clauses (A) and (B) may be taken into account in determining whether there has been an Intervening Event if such facts are not otherwise excluded under this definition); (C) any regulatory or clinical Changes relating to any Company Product (including (1) any regulatory actions, requests, recommendations or decisions of any Governmental Entity relating to any Company Product or any other regulatory or clinical development relating to any Company Product, and (2) any clinical trials, studies, tests or results or announcements thereof with respect to any Company Product); and (D) the research, development, testing, distribution, sale, supply, license, marketing, promotion, manufacturing or commercialization of any Company Product.

(ii) “Superior Proposal” means an unsolicited bona fide written Takeover Proposal that was first received after the date hereof that (x) did not result from a breach of Section 7.5 and (y) the Board of Directors of the Company determines, in good faith, after consultation with its outside legal counsel and its financial advisor, (A) is reasonably likely to be consummated in accordance with its terms (if accepted), taking into account all legal, regulatory and financing aspects (including certainty of closing and, to the extent third party financing is required, that such financing is then fully committed on customary terms and conditions) of such Takeover Proposal and the Person making the proposal and other aspects of the Takeover Proposal that the Board of Directors of the Company deems relevant, and (B) if consummated, would result in a transaction more favorable from a financial point of view to the holders of Company Common Stock (solely in their capacity as such) than the Transactions; provided, however, that, for the purposes of this definition of “Superior Proposal,” the term “Takeover Proposal” shall have the meaning assigned to such term herein, except that references to “15%” in such definition shall be deemed to be references to “50%”.

(iii) “Takeover Proposal” means any inquiry, proposal or offer from any Person, other than Parent and the Parent Subsidiaries, relating to any (A) direct or indirect acquisition (whether in a single transaction or a series of related transactions) of assets of the Company or any of the Company Subsidiaries (including Securities of any Company Subsidiaries) equal to 15% or more of the consolidated assets of the Company and the Company Subsidiaries, or to which 15% or more of the revenues of the Company and the Company Subsidiaries on a consolidated basis are attributable for the most recent fiscal year in which audited financial statements are then available, (B) direct or indirect acquisition from the Company or issuance (whether in a single transaction or a series of related transactions) of 15% or more of any class of equity or voting securities of the Company, (C) tender offer or exchange offer that, if consummated, would result in such Person Beneficially Owning 15% or more of any class of equity or voting securities of the Company, or (D) merger, consolidation, share exchange, business combination, joint venture, reorganization, recapitalization, liquidation, dissolution

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or similar transaction or series of related transactions involving the Company or any of the Company Subsidiaries, under which (1) such Person would, directly or indirectly, acquire assets equal to 15% or more of the consolidated assets of the Company and the Company Subsidiaries, or to which 15% or more of the revenues of the Company and the Company Subsidiaries on a consolidated basis are attributable for the most recent fiscal year in which audited financial statements are then available, or (2) the stockholders or equityholders of such Person immediately after giving effect to such transaction(s) would Beneficially Own 15% or more of any class of equity or voting securities of the Company or the surviving or resulting entity in such transaction(s).

Section 7.6 Employee Matters.

(a) Parent agrees that each Continuing Employee shall be provided, (i) for a period extending until the earlier of the termination of such Continuing Employee's employment with such entities or the first anniversary of the Closing Date, with (A) base compensation and target annual cash incentive opportunity that are not less than the base compensation and target annual cash incentive opportunity provided by the Company to such Continuing Employee immediately prior to the date of this Agreement, and (B) severance benefits that are substantially comparable in the aggregate to the severance benefits for which such employees were eligible immediately prior to the Closing, and (ii) for a period extending until the earlier of the termination of such Continuing Employee's employment with such entities or December 31, 2020, with other employee benefits (excluding any defined benefit pension, and post-employment or retiree benefits) that are substantially comparable in the aggregate as the other employee benefits provided to such employees immediately prior to the Closing. Notwithstanding the foregoing, following the Closing, each Continuing Employee shall participate in Parent's 401(k) plan on terms substantially comparable with those of similarly situated employees of Parent and Parent shall cause a 401(k) plan sponsored by Parent, the Surviving Corporation or one of their Affiliates to accept rollovers of distributions from the Company's 401(k) plan to such Continuing Employees to the extent elected by such Continuing Employees and to the extent permitted under applicable law or tax qualification requirements, and such rollovers shall include in-kind rollovers of outstanding loan balances of such Continuing Employees to the extent elected by the Continuing Employees. As of the Closing Date, Parent shall, or shall cause the Surviving Corporation or relevant Affiliate to, credit to Continuing Employees the amount of vacation time that such employees had accrued under any applicable Company Benefit Plans as of the Closing Date.

(b) Except to the extent necessary to avoid the duplication of benefits, the Surviving Corporation shall use commercially reasonable efforts to recognize the service of each Continuing Employee with the Company or its Affiliates before the Effective Time as if such service had been performed with Parent or its Affiliates (i) for purposes of eligibility and vesting under any employee benefit plans (including Parent's 401(k) plan) and programs of the Parent, of the Surviving Corporation or any of their Affiliates (the "Surviving Corporation Plans") in which the Continuing Employee participates after the Effective Time, and (ii) for benefit accrual purposes under any Surviving Corporation Plan that is a vacation or severance plan in which the Continuing Employee participates after the Effective Time; provided, that such recognition of service shall not apply for purposes of any plan or arrangement that is a defined benefit pension plan or that is grandfathered or frozen, either with respect to level of benefits or participation or for any post-retirement health or welfare plan.

(c) With respect to any health and welfare plan maintained by the Surviving Corporation or its Affiliates in which Continuing Employees are eligible to participate after the Effective Time, the Surviving Corporation and its Affiliates shall use commercially reasonable efforts to (i) waive all limitations as to preexisting conditions and exclusions with respect to participation and coverage requirements applicable to such employees to the extent such conditions and exclusions were satisfied or did not apply to such employees under the welfare plans maintained by the Company or its Affiliates prior to the Effective Time and (ii) provide each Continuing Employee with credit for any co-payments and deductibles paid prior to the Effective Time in satisfying any analogous deductible or out-of-pocket requirements to the extent applicable under any such plan.

(d) Parent shall, or shall cause the Surviving Corporation or its Affiliates to, assume and honor in accordance with their terms all Company Benefit Plans that are deferred compensation plans, agreements and

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arrangements, severance and separation pay plans, agreements and arrangements, and written employment, severance, retention, incentive, change in control and termination agreements (including any change in control provisions therein) applicable to employees of the Company, in the same manner and to the same extent that the Company would be required to perform and honor such plans, agreements and arrangements if the transactions contemplated by this Agreement had not been consummated including any right to amend or terminate such plans, agreements and arrangements pursuant to their terms. Nothing in this Agreement is intended to (i) be treated as an amendment to any particular Company Benefit Plan, (ii) prevent Parent from amending or terminating any of the Parent Benefit Plans or, after the Effective Time, any Company Benefit Plan in accordance their terms, (iii) prevent Parent, after the Effective Time, from terminating the employment of any Continuing Employee or (iv) create any third party beneficiary rights in any employee of the Company or any Company Subsidiaries, any beneficiary or dependent thereof, or any collective bargaining representative thereof, with respect to the compensation, terms and conditions of employment and/or benefits that may be provided to any Continuing Employee by Parent or the Company or Company Subsidiaries or under any benefit plan which Parent or the Company or Company Subsidiaries may maintain.

Section 7.7 Fees and Expenses. Except as provided in Section 9.4, whether or not the Merger is consummated, all expenses incurred in connection with this Agreement and the Transactions shall be paid by the Party incurring such expenses.

Section 7.8 Directors' and Officers' Indemnification and Insurance.

(a) From and after the Effective Time, the Surviving Corporation shall, and Parent shall cause the Surviving Corporation to, to the fullest extent permitted under the DGCL, indemnify and hold harmless, each Person who is on the date hereof, was previously, or during the period from the date hereof through the date of the Effective Time will be, serving as a director, officer, employee or agent of the Company or any Company Subsidiary or, at the request or for the benefit of the Company or any Company Subsidiary, as a director, trustee or officer of any other entity or any benefit plan (collectively, the "Indemnified Persons"), in the event of any threatened or actual Proceeding, whether civil, criminal or administrative, based on, or arising out of, or pertaining to the fact that the Indemnified Person is or was a director (including in a capacity as a member of any board committee), officer, employee or agent of the Company, any of the Company Subsidiaries or any of their respective predecessors prior to the Effective Time (including with respect to any acts, facts, events or omissions occurring in connection with the approval of this Agreement or any of the Transactions) (a "Claim"), whether in any case such Claim is made before, on or after the Effective Time against any expenses (including reasonable attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such Indemnified Person in connection with any such threatened or actual Claim. The Surviving Corporation shall, and Parent shall cause the Surviving Corporation to, advance expenses (including reasonable attorneys' fees) incurred by an Indemnified Person who is on the date hereof, was previously, or during the period from the date hereof through the date of the Effective Time will be, serving as a director or officer of the Company in defending any Claim in advance of the final disposition of such Claim upon receipt of an undertaking by or on behalf of such Indemnified Person to repay such amount if it shall ultimately be determined that such person is not entitled to be indemnified by the Company pursuant to this Section 7.8.

(b) Neither Parent nor the Surviving Corporation shall settle, compromise or consent to the entry of any judgment in any threatened or actual Claim for which indemnification could be sought by an Indemnified Person hereunder, unless such settlement, compromise or consent includes an unconditional release of such Indemnified Person from all liability arising out of such Claim or such Indemnified Person otherwise consents in writing to such settlement, compromise or consent. Parent and the Surviving Corporation shall cooperate with an Indemnified Person in the defense of any matter for which such Indemnified Person could seek indemnification hereunder.

(c) For a period of six years after the Effective Time, the Surviving Corporation and each of its Subsidiaries shall, and Parent will cause the Surviving Corporation and each of its Subsidiaries to, cause to be

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maintained in effect provisions in the Constituent Documents of the Surviving Corporation and each of its Subsidiaries (or in such documents of any successor to the business of the Surviving Corporation or any of its Subsidiaries) regarding elimination of liability of directors, indemnification of officers, directors, employees and agents and advancement of expenses that are no less advantageous to the intended beneficiaries than the corresponding provisions in the Constituent Documents of the Company in existence on the date of this Agreement, which provisions shall not be amended, repealed or otherwise modified for a period of six years after the Effective Time in any manner that would adversely affect the rights thereunder of any such individuals. From and after the Effective Time, any agreement of any Indemnified Person with the Company or any of its Subsidiaries regarding elimination of liability, indemnification or advancement of expenses shall be assumed by the Surviving Corporation, shall survive the Merger and shall continue in full force and effect in accordance with its terms.

(d) Prior to the Closing Date, the Company shall, or if the Company is unable to, Parent shall cause the Surviving Corporation as of or following the Effective Time to, purchase a six year prepaid “tail” policy on the current policies of directors’ and officers’ liability insurance and fiduciary liability insurance maintained by the Company with respect to claims arising from facts or events that occurred on or before the Effective Time (including for acts or omissions occurring in connection with the approval of this Agreement and the consummation of the Transactions) (“D & O Insurance”); provided that the Company shall not pay, and the Surviving Corporation shall not be required to pay, for such “tail” policy more than 300% of the current annual premium paid by the Company for such D & O Insurance. If the Company or the Surviving Corporation shall for any reason fail to obtain such “tail” policy, the Surviving Corporation or Parent shall maintain for a period of six years after the Effective Time such D & O Insurance (provided that the Surviving Corporation or Parent (or any successor) may substitute therefor policies of at least the same coverage and amounts containing terms and conditions which are, in the aggregate, no less advantageous to the insured); provided that in no event shall the Surviving Corporation or Parent be required to pay in any one year more than 300% of the current annual premium paid by the Company for such D & O Insurance; provided, further, that if the annual premiums of such D & O Insurance exceed such amount, the Surviving Corporation shall be obligated to obtain a policy with the greatest coverage available for a cost not exceeding such amount.

(e) If Parent or the Surviving Corporation or any of its successors or assigns (i) consolidates with or merges into any other Person and shall not be the continuing or surviving corporation or entity of such consolidation or merger, or (ii) transfers or conveys all or substantially all of its property and assets to any Person, then, and in each such case, proper provision shall be made so that the applicable successor, assign or transferee shall assume the obligations set forth in this Section 7.8 (including this Section 7.8(e)).

(f) The obligations of Parent and the Surviving Corporation under this Section 7.8 shall not be terminated or modified in such a manner as to adversely affect any Indemnified Person to whom this Section 7.8 applies without the consent of such affected Indemnified Person (it being expressly agreed that the Indemnified Persons to whom this Section 7.8 applies shall be third party beneficiaries of this Section 7.8). The rights in this Section 7.8 shall survive consummation of the Merger and are intended to benefit, and shall be enforceable by, each Indemnified Person.

(g) The Surviving Corporation shall, and Parent shall cause the Surviving Corporation to, pay all reasonable and documented out-of-pocket expenses, including reasonable attorneys’ fees, that may be incurred by any Indemnified Person in enforcing the indemnity and other obligations provided in this Section 7.8; provided that a court of competent jurisdiction has determined by a final, nonappealable order or judgment such Indemnified Person is entitled to indemnification hereunder.

Section 7.9 Public Announcements. The Company, Parent and Merger Sub agree that the press release announcing the execution and delivery of this Agreement shall be a joint release of, and shall not be issued prior to the approval of each of, the Company and Parent. Subject to Section 7.5 and Section 7.19, including any Change in Recommendation or Parent Change in Recommendation and except as may be required by applicable

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Law or any listing agreement with or rule of any national securities exchange or association, Parent and the Company shall use commercially reasonable efforts to develop a joint communications plan and each Party shall (a) consult with the other Party prior to issuing any press releases or other public statements or communications with respect to the Transactions (except to the extent that any such press releases or other public statements or communications are materially consistent with prior press releases or other public statements or communications made in accordance with this Section 7.9) and (b) consult with each other, and give each other the opportunity to review and comment upon, before issuing any press release or, to the extent practicable, otherwise making any public statement or communication with respect to this Agreement or the Transactions (except to the extent that any such press releases or other public statements or communications are materially consistent with prior press releases or other public statements or communications made in accordance with this Section 7.9). Neither Party shall be required by this Section 7.9 to consult with the other Party or any other Person with respect to a public announcement in connection with (i) in the case of the Company, a Change in Recommendation or, in accordance with Section 7.5(e), a Takeover Proposal and (ii) in the case of the Parent, a Parent Change in Recommendation or, in accordance with Section 7.19(e), a Parent Takeover Proposal.

Section 7.10 Notice of Certain Events.

(a) Each of Parent and the Company shall promptly notify the other after receiving or becoming aware of (i) any notice or other communication from any Person alleging that the consent of that Person is or may be required in connection with the Transactions, (ii) any Change that would have a Material Adverse Effect, in the case of the Company, or a Parent Material Adverse Effect, in the case of Parent, (iii) any Proceeding commenced or, to its knowledge, threatened against, relating to or otherwise involving Parent or any of the Parent Subsidiaries or the Company or any of the Company Subsidiaries, as the case may be, that relates to the consummation of the Transactions and (iv) any Change that has occurred that would reasonably be expected to result in any of the conditions set forth in Article VIII not being satisfied; provided, however, that the delivery of any notice pursuant to this Section 7.10(a) shall not limit or otherwise affect the remedies available hereunder to the Party receiving such notice; provided, further, that, notwithstanding the foregoing, a failure to comply with this Section 7.10(a) shall not constitute the failure of any condition set forth in Article VIII to be satisfied unless the underlying change or event would independently result in the failure of a condition set forth in Article VIII to be satisfied.

(b) The Company shall (i) promptly notify Parent of receipt by the Company of any written communications from any Five Percent Holder or any of its Affiliates or Representatives, (ii) provide Parent with a reasonable opportunity to review and comment on filings with any Governmental Entity or national securities exchange related to any such communication or any consent statement on Schedule 14C filed by any Five Percent Holder (or member of a group that is a Five Percent Holder), which comments the Company shall consider in good faith, and (iii) keep Parent apprised of, and consult with Parent with respect to, the strategy related thereto. No settlement relating to a Five Percent Holder shall be agreed to or made without Parent's prior written consent, such consent not to be unreasonably withheld, conditioned or delayed, if such settlement shall bind or adversely affect the Company or any of the Company Subsidiaries after the Effective Time.

Section 7.11 Listing of Shares of Parent Common Stock; Form S-8. Parent shall use its reasonable best efforts to cause the shares of Parent Common Stock to be issued in the Merger to be approved for listing on the Nasdaq Global Market, subject to official notice of issuance, prior to the Closing Date. Promptly after the Effective Time (but in no event later than 10 Business Days following the Effective Time), Parent shall prepare and file with the SEC a registration statement on Form S-8 (or other appropriate form) relating to the shares of Parent Common Stock issuable with respect to the Parent Stock Options to be issued to the holders of Company Stock Options as contemplated by Section 2.7.

Section 7.12 Section 16 of the Exchange Act. Prior to the Effective Time, each of Parent and the Company shall take all reasonable actions intended to cause any dispositions of Company Common Stock (including derivative securities with respect to Company Common Stock) and acquisitions of Parent Common Stock

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(including derivative securities with respect to Parent Common Stock) resulting from the transactions contemplated by [Article II](#) and [Article III](#) by each individual who is subject to the reporting requirements of Section 16(a) of the Exchange Act, to be exempt under Rule 16b-3 promulgated under the Exchange Act.

Section 7.13 State Takeover Laws. If any “fair price,” “business combination” or “control share acquisition” statute or other similar statute or regulation is or shall become applicable to the Transactions, the Company shall use all reasonable best efforts to grant such approvals and take such actions as are necessary so that the Transactions may be consummated as promptly as practicable on the terms contemplated hereby and shall otherwise act to minimize the effects of any such statute or regulation on the Transactions.

Section 7.14 Stockholder Litigation. The Company shall promptly advise Parent orally and in writing of any Proceeding brought by any stockholder of the Company against the Company and/or its directors, and shall keep Parent reasonably informed regarding any such Proceeding. The Company shall give Parent the opportunity to participate in, subject to a customary joint defense agreement, but not control the defense or settlement of any such Proceeding, shall give due consideration to Parent’s advice with respect to such Proceeding and shall not settle any such Proceeding without the prior written consent of Parent (which consent may not be unreasonably withheld, conditioned or delayed). Parent shall promptly advise the Company orally and in writing of any Proceeding brought by any stockholder of Parent against Parent and/or its directors, and shall keep the Company reasonably informed regarding any such Proceeding.

Section 7.15 Tax Matters. From the date of this Agreement and through the Closing Date, the Parties agree to use commercially reasonable efforts to consider in good faith alternative transaction structures for the purpose of achieving certain business objectives of the Surviving Corporation and its Affiliates after the Closing; provided, that no such structures shall result in a material adverse effect to the Company, Parent or the Surviving Corporation, including any material adverse effect on the qualification of the Merger as a reorganization within the meaning of Section 368(a) of the Code and each Party’s determination as to whether to undertake such alternative transaction structures will be made at the sole discretion of such Party.

Section 7.16 Stock Exchange Delisting; Exchange Act Deregistration. Following the Effective Time, each of the Surviving Corporation and Parent shall use reasonable best efforts to take, or cause to be taken, all actions, and do or cause to be done all things, necessary, proper or advisable under applicable Laws and rules and policies of The Nasdaq Stock Market LLC to enable the delisting of Company Common Stock from The Nasdaq Stock Market LLC on the Closing Date and the deregistration of Company Common Stock under the Exchange Act as soon as practicable after the Effective Time.

Section 7.17 Obligations of Merger Subsidiary. Parent shall take all action necessary to cause Merger Sub to perform its obligations under this Agreement and to consummate the Merger on the terms and conditions set forth in this Agreement.

Section 7.18 Owned Shares. Parent shall vote or caused to be voted all shares of Company Common Stock owned, beneficially or of record, by it or any of its controlled Affiliates in favor of the Company Stockholder Approval. The Company shall vote or caused to be voted all shares of Parent Common Stock owned, beneficially or of record, by it or any of its controlled Affiliates in favor of the Parent Stockholder Approval.

Section 7.19 Parent No Solicitation.

(a) From the date hereof until the earlier of the Effective Time and the termination of this Agreement pursuant to [Section 9.1](#), except as otherwise set forth in this [Section 7.19](#), Parent shall not, nor shall it authorize or permit any of the Parent Subsidiaries to, and Parent shall use reasonable best efforts to cause its and its Subsidiaries’ respective Representatives not to, directly or indirectly (i) initiate or solicit or knowingly facilitate, knowingly induce or knowingly encourage any inquiry or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, a Parent Takeover Proposal, (ii) enter into, continue or otherwise

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participate in any discussions or negotiations regarding, furnish to any Person any information or data with respect to, or cooperate in any way that would otherwise reasonably be expected to lead to, any proposal or offer that constitutes, or would reasonably be expected to lead to, any Parent Takeover Proposal, (iii) submit to the stockholders of Parent for their approval or adoption any Parent Takeover Proposal or (iv) agree or publicly announce an intention to take any of the foregoing actions. Except as otherwise set forth in Section 7.19(d), the Board of Directors of Parent or any committee thereof shall not approve, declare advisable, adopt or recommend, or publicly propose to approve, declare advisable, adopt or recommend, or allow Parent or any Parent Subsidiary to execute or enter into, any binding or non-binding letter of intent, agreement in principle, memorandum of understanding, merger agreement, acquisition agreement, option agreement, joint venture agreement, partnership agreement or other agreement contemplating or otherwise in connection with, or that is intended to or would reasonably be expected to lead to, any Parent Takeover Proposal (other than confidentiality agreements permitted under Section 7.19(b)) (i) (a "Parent Alternative Acquisition Agreement"). Parent shall, and Parent shall cause the Parent Subsidiaries and shall use reasonable best efforts to cause its and their respective Representatives to, immediately cease and cause to be terminated any existing activities, discussions or negotiations with any Persons or their Representatives conducted prior to the date of this Agreement with respect to any Parent Takeover Proposal and will request the prompt return or destruction of any confidential information previously furnished to such Persons in connection therewith and immediately terminate the access of each such Person and its Representatives to any electronic data room maintained by or on behalf of Parent or any of the Parent Subsidiaries. Neither Parent nor any of the Parent Subsidiaries shall modify, amend or terminate, or waive, release, fail to enforce or assign any provisions of, any confidentiality agreement (other than any standstill provision therein) to which it is a party relating to any Parent Takeover Proposal or any inquiry, offer or proposal in connection therewith and shall enforce, to the fullest extent permitted under applicable Law, the provisions of any such agreement (other than any standstill provision therein). Without limiting the foregoing, any violation of the restrictions set forth in this Section 7.19 by any Representative of Parent or any of the Parent Subsidiaries shall be deemed to be a breach of this Section 7.19 by Parent.

(b) Notwithstanding the foregoing, prior to receipt of the Parent Stockholder Approval, Parent may, in response to a bona fide written Parent Takeover Proposal that was first received after the date hereof, was unsolicited and did not result from a breach of Section 7.19(a):

(i) furnish information with respect to Parent and the Parent Subsidiaries to the Person making such Parent Takeover Proposal and its Representatives pursuant to and in accordance with a confidentiality agreement containing provisions no less restrictive in any substantive respect than those contained in the Confidentiality Agreement; provided that such confidentiality agreement need not contain a standstill provision; provided, further, that all such information provided to such Person has previously been provided to the Company or is provided to the Company prior to or substantially concurrently with (and in any event on the same calendar day as) the time it is provided to such Person; and

(ii) participate in discussions or negotiations with such Person or its Representatives regarding such Parent Takeover Proposal;

provided, in each case, that the Board of Directors of Parent determines in good faith (after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation), that (i) after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation (it being understood that the Parent Financial Advisor is a financial advisor of nationally recognized reputation), such Parent Takeover Proposal is, or would reasonably be expected to lead to, a Parent Superior Proposal and (ii) after consultation with its outside legal counsel, the failure to furnish such information or participate in such discussions or negotiations with respect to such Parent Takeover Proposal would reasonably be expected to be inconsistent with its fiduciary duties under applicable Law.

(c) As promptly as reasonably practicable after the receipt, directly or indirectly, by Parent of any Parent Takeover Proposal or any proposal, offer or inquiry with respect to, or that would reasonably be expected

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to lead to, any Parent Takeover Proposal, and in any case within 24 hours after the receipt thereof, Parent shall provide oral and written notice to the Company of (i) such Parent Takeover Proposal, proposal, offer or inquiry, (ii) the identity of the Person making any such Parent Takeover Proposal, proposal, offer or inquiry and (iii) the economic and other material terms and conditions of any such Parent Takeover Proposal, proposal, offer or inquiry (including an unredacted copy of all written materials provided by such Person to Parent in connection with such Parent Takeover Proposal, proposal, offer or inquiry and any amendments or modifications thereto). Parent shall promptly (and in any event within 24 hours) keep the Company reasonably informed of any material developments with respect to any such Parent Takeover Proposal, proposal, offer or inquiry (including any material changes thereto and copies of any additional written materials received by Parent, the Parent Subsidiaries or their respective Representatives from the Person that submitted such Parent Takeover Proposal or such proposal, offer or inquiry or such Person's Representatives).

(d) Except as provided in this Section 7.19(d), neither the Board of Directors of Parent nor any committee thereof shall, directly or indirectly, effect a Parent Change in Recommendation. Notwithstanding the foregoing, at any time prior to receipt of the Parent Stockholder Approval, the Board of Directors of Parent may, in response to a Parent Superior Proposal (that has not been withdrawn) or a Parent Intervening Event, effect a Parent Change in Recommendation; provided that the Board of Directors of Parent determines in good faith (after consultation with its outside legal counsel and a financial advisor of nationally recognized reputation) that the failure to do so would be inconsistent with its fiduciary duties under applicable Law; provided, further, that the Board of Directors of Parent may not effect such a Parent Change in Recommendation unless:

(i) the Board of Directors of Parent shall have first provided four Business Days' prior written notice to the Company that it is prepared to effect a Parent Change in Recommendation in response to a Parent Superior Proposal or a Parent Intervening Event (it being understood that the delivery of such notice shall not in and of itself constitute a Parent Change in Recommendation), which notice shall (A) in the case of a Parent Superior Proposal, include the material terms and conditions of the Parent Superior Proposal that is the basis of the proposed action of the Board of Directors of Parent (including the identity of the Person making such Parent Superior Proposal and a written summary of any material terms and conditions communicated orally), and shall attach the most current unredacted version of the relevant Parent Alternative Acquisition Agreement (if any) with the Person making such Parent Superior Proposal and unredacted copies of any other documents evidencing or specifying any other terms and conditions of such Parent Takeover Proposal received from, or provided by, the Person making such Parent Superior Proposal and (B) in the case of a Parent Intervening Event, state in reasonable detail the material facts underlying, and the rationale and basis for, the determination that a Parent Intervening Event has occurred (it being understood and agreed that an amendment to the material terms of such Parent Superior Proposal or a material change to the facts and circumstances that are the basis for such Parent Intervening Event shall require an updated notice and a new three Business Day period pursuant to this clause (i) during which period Parent shall be required to comply with this Section 7.19(d) anew with respect to such additional notice);

(ii) during such four Business Day period, Parent and its Representatives, to the extent reasonably requested by the Company, engaged in good faith negotiations with the Company to amend this Agreement in such a manner (A) in the case of a Parent Superior Proposal, that the Parent Takeover Proposal ceases to constitute a Parent Superior Proposal or (B) in the case of a Parent Intervening Event, to obviate the need to effect a Parent Change in Recommendation; and

(iii) after taking into account any revised terms offered in writing by the Company, the Board of Directors of Parent determines in good faith (A) in the case of a Parent Superior Proposal, after consultation with its legal counsel and financial advisor, that such Parent Takeover Proposal continues to constitute a Parent Superior Proposal and (B) in the case of a Parent Superior Proposal or a Parent Intervening Event, after consultation with its outside legal counsel, that the failure to make a Parent Change in Recommendation would continue to be inconsistent with its fiduciary duties under applicable Law.

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(e) Nothing contained in this Section 7.19 shall prohibit Parent from complying with Rule 14d-9, Rule 14e-2 or Item 1012(a) of Regulation M-A promulgated under the Exchange Act in respect of any Parent Takeover Proposal or making any disclosure to the stockholders of Parent if the Board of Directors of Parent determines in good faith (after consultation with its outside legal counsel) that the failure to make such disclosure would reasonably be expected to be inconsistent with its fiduciary duties under applicable Law; provided, however, that any such action taken or statement made that relates to a Parent Takeover Proposal shall not be deemed to be a Parent Change in Recommendation if the Board of Directors of Parent reaffirms the Parent Recommendation in such statement or in connection with such action; provided, further, that neither the Board of Directors of Parent nor any committee thereof shall, except as expressly permitted by Section 7.19(d) (Parent No Solicitation), effect a Parent Change in Recommendation.

(f) For purposes of this Agreement:

(i) “Parent Intervening Event” means a Change that is material to Parent and the Parent Subsidiaries, taken as a whole, which was not known by, or if known, the effect of which was not reasonably foreseeable by, the Board of Directors of Parent as of or prior to the date hereof (which Change does not relate to a Parent Takeover Proposal), and which becomes known to the Board of Directors of Parent prior to the Parent Stockholder Approval; provided, however that none of the following shall constitute, be deemed to contribute to or otherwise be taken into account in determining whether there has been a Parent Intervening Event: (A) any changes in the market price or trading volume of Company Common Stock or Parent Common Stock, in and of itself; (B) the fact that, in and of itself, Parent or any of the Parent Subsidiaries exceeds any internal or published projections, forecasts, estimates or predictions in respect of revenues, earnings or other financial or operating metrics for any period ending after the date of this Agreement (it being understood that the underlying facts giving rise or contributing to events described in clauses (A) and (B) may be taken into account in determining whether there has been a Parent Intervening Event if such facts are not otherwise excluded under this definition); (C) any regulatory or clinical Changes relating to any Parent Product (including (1) any regulatory actions, requests, recommendations or decisions of any Governmental Entity relating to any Parent Product or any other regulatory or clinical development relating to any Parent Product, and (2) any clinical trials, studies, tests or results or announcements thereof with respect to any Parent Product); and (D) the research, development, testing, distribution, sale, supply, license, marketing, promotion, manufacturing or commercialization of any Parent Product.

(ii) “Parent Superior Proposal” means an unsolicited bona fide written Parent Takeover Proposal that was first received after the date hereof that (x) did not result from a breach of Section 7.19 and (y) the Board of Directors of Parent determines, in good faith, after consultation with its outside legal counsel and its financial advisor, (A) is reasonably likely to be consummated in accordance with its terms (if accepted), taking into account all legal, regulatory and financing aspects (including certainty of closing and, to the extent third party financing is required, that such financing is then fully committed on customary terms and conditions) of such Parent Takeover Proposal and the Person making the proposal and other aspects of the Parent Takeover Proposal that the Board of Directors of Parent deems relevant, and (B) if consummated, would result in a transaction more favorable from a financial point of view to the holders of Parent Common Stock (solely in their capacity as such) than the Transactions; provided, however, that, for the purposes of this definition of “Parent Superior Proposal,” the term “Parent Takeover Proposal” shall have the meaning assigned to such term herein, except that references to “15%” in such definition shall be deemed to be references to “50%”.

(iii) “Parent Takeover Proposal” means any inquiry, proposal or offer from any Person, other than the Company and the Company Subsidiaries, relating to any (A) direct or indirect acquisition (whether in a single transaction or a series of related transactions) of assets of Parent or any of the Parent Subsidiaries (including Securities of any Parent Subsidiaries) equal to 15% or more of the consolidated assets of Parent and the Parent Subsidiaries, or to which 15% or more of the revenues of Parent and the Parent Subsidiaries on a consolidated basis are attributable for the most recent fiscal

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year in which audited financial statements are then available, (B) direct or indirect acquisition from Parent or issuance (whether in a single transaction or a series of related transactions) of 15% or more of any class of equity or voting securities of Parent, (C) tender offer or exchange offer that, if consummated, would result in such Person Beneficially Owning 15% or more of any class of equity or voting securities of Parent, or (D) merger, consolidation, share exchange, business combination, joint venture, reorganization, recapitalization, liquidation, dissolution or similar transaction or series of related transactions involving Parent or any of the Parent Subsidiaries, under which (1) such Person would, directly or indirectly, acquire assets equal to 15% or more of the consolidated assets of Parent and the Parent Subsidiaries, or to which 15% or more of the revenues of Parent and the Parent Subsidiaries on a consolidated basis are attributable for the most recent fiscal year in which audited financial statements are then available, or (2) the stockholders or equityholders of such Person immediately after giving effect to such transaction(s) would Beneficially Own 15% or more of any class of equity or voting securities of Parent or the surviving or resulting entity in such transaction(s).

Section 7.20 Credit Facility. The Company shall, and shall cause the Company Subsidiaries to, deliver all customary notices and take all other reasonably necessary actions to facilitate the termination on the Closing Date of all commitments in respect of the Credit Facility, the repayment in full on the Closing Date of all outstanding obligations in respect of the Indebtedness thereunder, and the release on the Closing Date of any Liens securing such Indebtedness and guarantees in connection therewith, in each case pursuant to the delivery to Parent at least three Business Days prior to the Closing of an executed payoff letter with respect to the Credit Facility (the "Payoff Letter") in form and substance customary for transactions of this type, from the applicable agent on behalf of the persons to whom such Indebtedness is owed, which Payoff Letter together with any related release documentation shall, among other things, include the payoff amount and provide that Liens (and guarantees), if any, granted in connection with the Credit Facility relating to the assets, rights and properties of the Company or any of the Company Subsidiaries securing or relating to such Indebtedness, shall, upon the payment of the amount set forth in the applicable Payoff Letter at or prior to the Effective Time, be released and terminated. The obligations of the Company pursuant to this Section 7.20 shall be subject to Parent or Merger Sub providing or causing to be provided all funds required to effect all such repayments at or prior to the Effective Time; provided that, no such repayment shall be required to be made prior to the Effective Time.

ARTICLE VIII

CONDITIONS PRECEDENT

Section 8.1 Conditions to Each Party's Obligation to Effect the Merger. The respective obligations of each Party to effect the Merger are subject to the satisfaction or (to the extent permitted by applicable Law) waiver on or prior to the Closing Date of the following conditions:

(a) Stockholder Approvals. Each of the Company Stockholder Approval and the Parent Stockholder Approval shall have been obtained.

(b) Stock Exchange Listing. The shares of Parent Common Stock to be issued in the Merger and such other shares to be reserved for issuance in connection with the Merger shall have been approved for listing on the Nasdaq Global Market.

(c) HSR Act. Any waiting period (and any extension thereof) applicable to the Merger under the HSR Act shall have been terminated or shall have expired.

(d) No Injunctions or Restraints; Illegality. No Laws shall have been adopted or promulgated after the date of this Agreement, and no temporary restraining order, preliminary or permanent injunction or other Order shall have been issued and remain in effect, by a Governmental Entity of competent jurisdiction having the effect of making the Merger illegal or otherwise prohibiting consummation of the Merger (collectively, "Restraints").

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(e) Effectiveness of the Form S-4. The Form S-4 shall have been declared effective by the SEC under the Securities Act. No stop order suspending the effectiveness of the Form S-4 shall have been issued by the SEC and remain in effect and no Proceedings for that purpose shall have been initiated or threatened by the SEC.

Section 8.2 Conditions to Obligations of Parent and Merger Sub. The obligations of Parent and Merger Sub to effect the Merger are subject to the satisfaction of, or waiver by Parent, on or prior to the Closing Date of the following additional conditions:

(a) Representations and Warranties. The representations and warranties of the Company set forth in this Agreement, made as if none of such representations and warranties contained any qualifications or limitations as to “materiality” or Material Adverse Effect, shall be true and correct as of the date of this Agreement and as of the Closing Date as though made on and as of the Closing Date (except to the extent in either case that such representations and warranties speak as of another date), except where the failure of such representations and warranties to be true and correct as so made does not constitute a Material Adverse Effect; provided, however, that, notwithstanding the foregoing, (i) the representations and warranties set forth in Section 4.11(b) (Absence of Certain Changes) shall be true and correct in all respects and (ii) each of the Company Identified Representations, made as if none of such representations and warranties contained any qualifications or limitations as to “materiality” or Material Adverse Effect, shall be true and correct in all material respects except, with respect to the representations and warranties contained in Section 4.2(b) (Subsidiaries) and Section 4.3 (Capitalization), for de minimis inaccuracies, in the case of each of clause (i) and clause (ii), as of the date of this Agreement and as of the Closing Date as though made on and as of the Closing Date (except to the extent in either case that such representations and warranties speak as of another date). Parent shall have received a certificate of the chief executive officer or the chief financial officer of the Company to such effect.

(b) Performance of Obligations of the Company. The Company shall have performed or complied in all material respects with all agreements and covenants required to be performed by it under this Agreement on or prior to the Closing Date and Parent shall have received a certificate of the chief executive officer or the chief financial officer of the Company to such effect.

(c) Absence of Material Adverse Effect. Since the date of this Agreement there shall not have occurred a Change that has had or would reasonably be expected to have, individually or in the aggregate with all other Changes, a Material Adverse Effect and Parent shall have received a certificate of the chief executive officer or the chief financial officer of the Company to such effect.

(d) Tax Opinion. Parent shall have received an opinion of White & Case LLP (or other nationally recognized tax or accounting firm in the United States reasonably acceptable to the Parties) to the effect that, based on facts, representations and assumptions set forth in such opinion that are consistent with the state of facts existing at the Effective Time, the Merger will be treated for U.S. federal income tax purposes as a reorganization within the meaning of Section 368(a) of the Code, which opinion shall be substantially in the form attached hereto as Exhibit B; provided, that in the event that Parent is unable to obtain the opinion of White & Case LLP contemplated by this Section 8.2(d), Parent shall use commercially reasonable efforts to obtain an opinion of another nationally recognized tax or accounting firm in the United States reasonably acceptable to the Parties to the effect that, based on facts, representations and assumptions set forth in such opinion that are consistent with the state of facts existing at the Effective Time, the Merger will be treated for U.S. federal income tax purposes as a reorganization within the meaning of Section 368(a) of the Code. In rendering such opinion, counsel (or other tax advisor) may require and rely upon representations contained in certificates of officers of Parent and the Company, in each case, substantially in the form attached hereto as Exhibit D and Exhibit E, respectively.

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Section 8.3 Conditions to Obligations of the Company. The obligations of the Company to effect the Merger are subject to the satisfaction of, or waiver by the Company, on or prior to the Closing Date of the following additional conditions:

(a) **Representations and Warranties.** Each of the representations and warranties of Parent and Merger Sub set forth in this Agreement, in each case, made as if none of such representations and warranties contained any qualifications or limitations as to “materiality” or Parent Material Adverse Effect, shall be true and correct, in each case, as of the date of this Agreement and as of the Closing Date as though made on and as of the Closing Date (except to the extent in either case that such representations and warranties speak as of another date), except where the failure of such representations and warranties to be true and correct as so made does not constitute a Parent Material Adverse Effect; provided, however, that, notwithstanding the foregoing, (i) the representations and warranties set forth in Section 5.11(b) (Absence of Certain Changes) shall be true and correct in all respects and (ii) each of the Parent Identified Representations, made as if none of such representations and warranties contained any qualifications or limitations as to “materiality” or Material Adverse Effect, shall be true and correct in all material respects except, with respect to the representations and warranties contained in Section 5.2(b) (Subsidiaries) and Section 5.3 (Capitalization), for de minimis inaccuracies, in the case of each of clause (i) and clause (ii), as of the date of this Agreement and as of the Closing Date as though made on and as of the Closing Date (except to the extent in either case that such representations and warranties speak as of another date). The Company shall have received a certificate of the chief executive officer or the chief financial officer of Parent to such effect.

(b) **Performance of Obligations of Parent and Merger Sub.** Each of Parent and Merger Sub shall have performed or complied in all material respects with all agreements and covenants required to be performed by it under this Agreement on or prior to the Closing Date and the Company shall have received a certificate of the chief executive officer or the chief financial officer of Parent to such effect.

(c) **Tax Opinion.** The Company shall have received an opinion of O’Melveny and Myers LLP (or other nationally recognized tax or accounting firm in the United States reasonably acceptable to the Parties) to the effect that, based on facts, representations and assumptions set forth in such opinion that are consistent with the state of facts existing at the Effective Time, the Merger will be treated for U.S. federal income tax purposes as a reorganization within the meaning of Section 368(a) of the Code, which opinion shall be substantially in the form attached hereto as Exhibit C; provided, that in the event that the Company is unable to obtain the opinion of O’Melveny and Myers LLP contemplated by this Section 8.3(c), the Company shall use commercially reasonable efforts to obtain an opinion of another nationally recognized tax or accounting firm in the United States reasonably acceptable to the Parties to the effect that, based on facts, representations and assumptions set forth in such opinion that are consistent with the state of facts existing at the Effective Time, the Merger will be treated for U.S. federal income tax purposes as a reorganization within the meaning of Section 368(a) of the Code. In rendering such opinion, counsel (or other tax advisor) may require and rely upon representations contained in certificates of officers of Parent and the Company, in each case, substantially in the form attached hereto as Exhibit D and Exhibit E, respectively.

ARTICLE IX

TERMINATION

Section 9.1 Termination. This Agreement may be terminated at any time prior to the Effective Time, whether before or after receipt of the Company Stockholder Approval:

(a) by mutual written consent of Parent and the Company;

(b) by either Parent or the Company, if:

(i) Outside Date. The Merger shall not have been consummated by July 1, 2020 (the “Outside Date”);

(ii) Restraint. Any Restraint (other than a temporary restraining order, preliminary injunction or similar non-permanent Order) having any of the effects set forth in Section 8.1(d) (No Injunctions or Restraints; Illegality) shall be in effect and shall have become final and non-appealable;

(iii) No Company Stockholder Approval. The Company Stockholder Approval shall not have been obtained at the Company Stockholders Meeting or any adjournments or postponements thereof; or

(iv) No Parent Stockholder Approval. The Parent Stockholder Approval shall not have been obtained at the Parent Stockholders Meeting or any adjournments or postponements thereof;

provided, however, that the right to terminate this Agreement pursuant to this Section 9.1(b) shall not be available to any party whose failure to fulfill any obligation under this Agreement has been the primary cause of, or directly resulted in, the failure of any such condition;

(c) by Parent, if:

(i) Breach by the Company. The Company shall have breached or failed to perform any of its representations, warranties or covenants contained in this Agreement, which breach or failure to perform (A) is incapable of being cured by the Company prior to the Outside Date or is not cured by the earlier of (x) 30 days following written notice to the Company by Parent of such breach or (y) the Outside Date and (B) would result in a failure of any condition set forth in Section 8.2(a) (Representations and Warranties) or Section 8.2(b) (Performance of Obligations of the Company); provided, that neither Parent nor Merger Sub is then in breach of this Agreement so as to cause any failure of any condition set forth in Section 8.3(a) (Representations and Warranties) or Section 8.3(b) (Performance of Obligations of Parent and Merger Sub);

(ii) Violation of No Solicitation. The Company or any of the Company Subsidiaries or their respective Representatives shall have Willfully Breached any of their respective obligations under Section 7.5 (Company No Solicitation); or

(iii) Failure to Recommend or Change in Recommendation. The Board of Directors of the Company shall (A) fail to include the Company Recommendation in the Joint Proxy Statement/Prospectus, (B) effect a Change in Recommendation, (C) make any public recommendation in connection with a tender offer or exchange offer that is subject to Regulation 14D under the Exchange Act other than a recommendation in a Solicitation/Recommendation Statement on Schedule 14D-9 against such tender offer or exchange offer and other than a “stop, look and listen” notice of the type contemplated by Rule 14d-9(f) promulgated under the Exchange Act, or (D) if a Takeover Proposal (other than a Takeover Proposal subject to Regulation 14D) shall have been publicly announced or disclosed (other than by Parent, its Affiliates or its Representatives), fail to recommend against such Takeover Proposal or fail to reaffirm the Company Recommendation on or prior to the earlier of (I) 10 Business Days after such Takeover Proposal shall have been publicly announced or disclosed and (II) five Business Days prior to the Company Stockholders Meeting; provided, that Parent shall not have the right to terminate this Agreement pursuant to Section 9.1(c)(iii) (A), (B) or (D) if the Company Stockholder Approval has been obtained; or

(d) by the Company, if:

(i) Breach by Parent. Parent or Merger Sub shall have breached or failed to perform any of its representations, warranties or covenants contained in this Agreement, which breach or failure to perform (A) is incapable of being cured by Parent or Merger Sub prior to the Outside Date or is not cured by the earlier of (x) 30 days following written notice to Parent or Merger Sub by the Company of

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such breach or (y) the Outside Date and (B) would result in a failure of any condition set forth in Section 8.3(a) (Representations and Warranties) or Section 8.3(b) (Performance of Obligations of Parent and Merger Sub); provided, that the Company is not then in breach of this Agreement so as to cause any failure of any condition set forth in Section 8.2(a) (Representations and Warranties) or Section 8.2(b) (Performance of Obligations of the Company);

(ii) Violation of Parent No Solicitation. Parent or any of the Parent Subsidiaries or their respective Representatives shall have Willfully Breached any of their respective obligations under Section 7.19 (Parent No Solicitation); or

(iii) Parent Change in Recommendation. The Board of Directors of Parent shall (A) fail to include the Parent Recommendation in the Joint Proxy Statement/Prospectus, (B) effect a Parent Change in Recommendation, (C) make any public recommendation in connection with a tender offer or exchange offer that is subject to Regulation 14D under the Exchange Act other than a recommendation in a Solicitation/Recommendation Statement on Schedule 14D-9 against such tender offer or exchange offer and other than a “stop, look and listen” notice of the type contemplated by Rule 14d-9(f) promulgated under the Exchange Act or (D) if a Parent Takeover Proposal (other than a Parent Takeover Proposal subject to Regulation 14D) shall have been publicly announced or disclosed (other than by the Company, its Affiliates or its Representatives), fail to recommend against such Parent Takeover Proposal or fail to reaffirm the Parent Recommendation on or prior to the earlier of (I) 10 Business Days after such Parent Takeover Proposal shall have been publicly announced or disclosed and (II) five Business Days prior to the Parent Stockholders Meeting; provided, that the Company shall not have the right to terminate this Agreement pursuant to Section 9.1(d)(iii)(A), (B) or (D) if the Parent Stockholder Approval has been obtained.

Section 9.2 Effect of Termination. In the event of any termination of this Agreement as provided in Section 9.1 (Termination), the obligations of the Parties hereunder shall terminate and there shall be no liability on the part of any Party with respect thereto, except for the confidentiality provisions of Section 7.3 (Access to Information; Confidentiality) and the provisions of this Section 9.2 (Effect of Termination), Section 9.3 (Termination Fees), Section 9.4 (Parent Expenses) and Article X (General Provisions), each of which shall remain in full force and effect; provided, however, that, subject to the final sentence of Section 9.3(c), no Party shall be relieved or released from any liability or damages arising from a Willful Breach of any provision of this Agreement; provided, further, that in the event of a Willful Breach of this Agreement by the Company (as finally determined by a court of competent jurisdiction), following any termination of this Agreement, unless the Company has previously paid the Company Termination Fee pursuant to Section 9.3(a), Parent shall be entitled to \$18,340,000 (the “Willful Breach Damages”). Each of the Parties acknowledges that the Willful Breach Damages are an integral part of this Agreement, and that the Willful Breach Damages are not a penalty, but rather is a reasonable amount that will compensate Parent and Merger Sub in the circumstances in which such payment is payable for the efforts and resources expended and opportunities foregone while negotiating this Agreement and in reliance on this Agreement and on the expectation of the consummation of the Transactions, which amount would otherwise be impossible to calculate with precision. In addition, if the Company fails to pay in a timely manner the Willful Breach Damages when due and payable pursuant to this Section 9.2 (Effect of Termination), then (i) the Company shall reimburse Parent and Merger Sub for all costs and expenses (including disbursements and fees of counsel) incurred in the collection of such overdue amount, including in connection with any related Proceedings commenced and (ii) the Company shall pay to Parent and Merger Sub interest on the unpaid Willful Breach Damages from and including the date payment of such amount was due to but excluding the date of actual payment at the prime rate set forth in The Wall Street Journal in effect on the date such payment was required to be made plus 2%. Notwithstanding anything to the contrary in this Agreement, upon payment of the Willful Breach Damages pursuant to this Section 9.2 (Effect of Termination), none of the Company, any of their respective former, current or future officers, directors, partners, stockholders, managers, members, Affiliates or agents shall have any further liability or obligation relating to or arising out of this Agreement or the Transactions. In the event that the Willful Breach Damages have been actually paid by the

Company pursuant to this [Section 9.2](#), no Company Termination Fee shall be payable at any time pursuant to [Section 9.3\(a\)\(ii\)](#).

Section 9.3 Termination Fees.

(a) If:

(i) this Agreement is terminated pursuant to (A) [Section 9.1\(c\)\(ii\)](#) (Violation of No Solicitation), (B) [Section 9.1\(c\)\(iii\)](#) (Failure to Recommend or Change in Recommendation) or (C) [Section 9.1\(b\)\(iii\)](#) (No Company Stockholder Approval) if Parent has the right to terminate this Agreement pursuant to (1) [Section 9.1\(c\)\(ii\)](#) (Violation of No Solicitation) or (2) [Section 9.1\(c\)\(iii\)](#) (Failure to Recommend or Change in Recommendation) at the time of such termination of this Agreement; or

(ii) (A) this Agreement is terminated pursuant to [Section 9.1\(b\)\(i\)](#) (Outside Date), [Section 9.1\(b\)\(iii\)](#) (No Company Stockholder Approval) or [Section 9.1\(c\)\(i\)](#) (Breach by the Company), (B) (1) in the case of a termination pursuant to [Section 9.1\(b\)\(i\)](#) (Outside Date) or [Section 9.1\(c\)\(i\)](#) (Breach by the Company), a Takeover Proposal shall have been made to the Board of Directors of the Company or become publicly known, and not withdrawn, prior to the date of such termination, or (2) in the case of a termination pursuant to [Section 9.1\(b\)\(iii\)](#) (No Company Stockholder Approval), a Takeover Proposal shall have been made to the Board of Directors of the Company or become publicly known, and not publicly withdrawn, prior to the date of the Company Stockholders Meeting, and (C) within 12 months of such termination, the Company enters into a definitive agreement with any third party to consummate, or consummates, a Takeover Proposal;

then the Company shall pay, or cause to be paid, to Parent, by wire transfer of immediately available funds, an amount equal to \$18,340,000 (the "[Company Termination Fee](#)") (x) in the case of termination pursuant to [clause \(i\)](#) above, within two Business Days of the date of termination and (y) in the case of termination pursuant to [clause \(ii\)](#) above, within two Business Days of the date of the first to occur of (I) the execution of a definitive agreement relating to a Takeover Proposal and (II) consummation of a transaction relating to a Takeover Proposal; provided that, solely for purposes of this [Section 9.3\(a\)](#), the term "Takeover Proposal" shall have the meaning ascribed thereto in [Section 7.5\(f\)](#) (Company No Solicitation), except that all references to 15% shall be changed to 50%.

(b) If:

(i) this Agreement is terminated pursuant to (A) [Section 9.1\(d\)\(ii\)](#) (Violation of Parent No Solicitation), (B) [Section 9.1\(d\)\(iii\)](#) (Parent Change in Recommendation) or (C) [Section 9.1\(b\)\(iv\)](#) (No Parent Stockholder Approval) if the Company has the right to terminate this Agreement pursuant to (i) [Section 9.1\(d\)\(ii\)](#) (Violation of Parent No Solicitation) or (2) [Section 9.1\(d\)\(iii\)](#) (Parent Change in Recommendation) at the time of such termination of this Agreement; or

(ii) (A) this Agreement is terminated pursuant to [Section 9.1\(b\)\(i\)](#) (Outside Date), [Section 9.1\(b\)\(iv\)](#) (No Parent Stockholder Approval) or [Section 9.1\(d\)\(i\)](#) (Breach by Parent), (B) (1) in the case of a termination pursuant to [Section 9.1\(b\)\(i\)](#) (Outside Date) or [Section 9.1\(d\)\(i\)](#) (Breach by Parent), a Parent Takeover Proposal shall have been made to the Board of Directors of Parent or become publicly known, and not withdrawn, prior to the date of such termination, or (2) in the case of a termination pursuant to [Section 9.1\(b\)\(iv\)](#) (No Parent Stockholder Approval), a Parent Takeover Proposal shall have been made to the Board of Directors of Parent or become publicly known, and not publicly withdrawn, prior to the date of the Parent Stockholders Meeting, and (C) within 12 months of such termination, Parent enters into a definitive agreement with any third party to consummate, or consummates, a Parent Takeover Proposal,

then Parent shall pay to the Company, by wire transfer of immediately available funds, an amount equal to \$18,340,000 (the "[Parent Termination Fee](#)") (x) in the case of termination pursuant to [clause \(i\)](#) above,

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within two Business Days of the date of termination and (y) in the case of termination pursuant to clause (ii) above, within two Business Days of the date of the first to occur of (I) the execution of a definitive agreement relating to a Parent Takeover Proposal and (II) consummation of a transaction relating to a Parent Takeover Proposal; provided that, solely for purposes of this Section 9.3(b), the term “Parent Takeover Proposal” shall have the meaning ascribed thereto in Section 7.19(f) (Parent No Solicitation), except that all references to 15% shall be changed to 50%.

(c) Each of the Parties acknowledges that the agreements contained in this Section 9.3 (Termination Fees) are an integral part of this Agreement, and that (i) the Company Termination Fee is not a penalty, but rather is a reasonable amount that will compensate Parent and Merger Sub in the circumstances in which such payment is payable for the efforts and resources expended and opportunities foregone while negotiating this Agreement and in reliance on this Agreement and on the expectation of the consummation of the Transactions and (ii) the Parent Termination Fee is not a penalty, but rather is a reasonable amount that will compensate the Company in the circumstances in which such payment is payable for the efforts and resources expended and opportunities foregone while negotiating this Agreement and in reliance on this Agreement and on the expectation of the consummation of the Transactions, each of which amounts would otherwise be impossible to calculate with precision. In addition, if any Party fails to pay in a timely manner any amount due pursuant to Section 9.3(a) (Termination Fees) or Section 9.3(b) (Termination Fees), as applicable, then (i) such Party shall reimburse the other Party for all costs and expenses (including disbursements and fees of counsel) incurred in the collection of such overdue amount, including in connection with any related Proceedings commenced and (ii) such Party shall pay to the other Party interest on the amount payable pursuant to Section 9.3(a) (Termination Fees) or Section 9.3(b) (Termination Fees) from and including the date payment of such amount was due to but excluding the date of actual payment at the prime rate set forth in The Wall Street Journal in effect on the date such payment was required to be made plus 2%. Notwithstanding anything to the contrary in this Agreement, (A) upon payment of the Company Termination Fee pursuant to this Section 9.3 (Termination Fees), none of the Company, any of the Company Subsidiaries or any of their respective former, current or future officers, directors, partners, stockholders, managers, members, Affiliates or agents shall have any further liability or obligation relating to or arising out of this Agreement or the Transactions and (B) upon payment of the Parent Termination Fee pursuant to this Section 9.3 (Termination Fees), none of Parent, any of the Parent Subsidiaries or any of their respective former, current or future officers, directors, partners, shareholders, managers, members, Affiliates or agents shall have any further liability or obligation relating to or arising out of this Agreement or the Transactions.

Section 9.4 Expense Reimbursement.

(a) Unless Parent is entitled to the Company Termination Fee pursuant to Section 9.3(a)(i), if this Agreement is validly terminated pursuant to Section 9.1(b)(iii) (No Company Stockholder Approval), then the Company shall pay to Parent an amount equal to the Parent Expenses within two Business Days after such termination by wire transfer of immediately available funds to an account designated by Parent (the “Company Expense Reimbursement”). In the event that the Parent Expenses have been actually paid by the Company pursuant to this Section 9.4(a), upon subsequent payment of the Company Termination Fee pursuant to Section 9.3(a)(ii) or the Willful Breach Damages pursuant to Section 9.2, the amount of the Parent Expenses shall be credited towards the payment of the Company Termination Fee or the Willful Breach Damages, as applicable.

(b) Each of the Parties acknowledges that the agreements contained in this Section 9.4 (Expense Reimbursement) are an integral part of this Agreement, and that the Company Expense Reimbursement is not a penalty, but rather is a reasonable amount that will compensate Parent and Merger Sub in the circumstances in which such payment is payable for the efforts and resources expended and opportunities foregone while negotiating this Agreement and in reliance on this Agreement and on the expectation of the consummation of the

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Transactions, which amount would otherwise be impossible to calculate with precision. In addition, if the Company fails to pay in a timely manner any amount due pursuant to [Section 9.4\(a\)](#) (Expense Reimbursement), then (i) the Company shall reimburse Parent and Merger Sub for all costs and expenses (including disbursements and fees of counsel) incurred in the collection of such overdue amount, including in connection with any related Proceedings commenced and (ii) the Company shall pay to Parent and Merger Sub interest on the amount payable pursuant to [Section 9.4\(a\)](#) (Expense Reimbursement) from and including the date payment of such amount was due to but excluding the date of actual payment at the prime rate set forth in The Wall Street Journal in effect on the date such payment was required to be made plus 2%.

ARTICLE X

GENERAL PROVISIONS

Section 10.1 Non-Survival of Representations, Warranties and Agreements. None of the representations, warranties, covenants and other agreements in this Agreement or in any instrument delivered pursuant to this Agreement, including any rights arising out of any breach of such representations, warranties, covenants and other agreements, shall survive the Effective Time, except for those covenants and agreements contained herein and therein (including [Section 7.8](#) (Directors' and Officers' Indemnification and Insurance)) that by their terms apply or are to be performed in whole or in part after the Effective Time and this [Article X](#).

Section 10.2 Notices. All notices and other communications hereunder shall be in writing and shall be deemed duly given on the date of delivery if delivered personally, by email (which is confirmed by delivery receipt), or sent by a nationally recognized overnight courier service (providing proof of delivery). All notices hereunder shall be delivered as set forth below or pursuant to such other instructions as may be designated in writing by the Party to receive such notice:

If to Parent or Merger Sub, to:

Lantheus Holdings, Inc.
331 Treble Cove Road
North Billerica, MA 02160
Attention: General Counsel
Email: michael.duffy@lantheus.com

with a copy (which shall not constitute notice) to:

White & Case LLP
1221 Avenue of the Americas
New York, NY 10020-1095
Attention: Morton A. Pierce, Esq.
Bryan J. Luchs, Esq.
Email: morton.pierce@whitecase.com
bryan.luchs@whitecase.com

If to the Company, to:

Progenics Pharmaceuticals, Inc.
One World Trade Center, 47th Floor
New York, NY 10007
Attention: Mark Baker, Chief Executive Officer
Email: mbaker@progenics.com

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with a copy (which shall not constitute notice) to:

O'Melveny & Myers LLP
Times Square Tower
7 Times Square
New York, NY 10036
Attention: Tobias L. Knapp, Esq.
Email: tknapp@omm.com

Section 10.3 Interpretation. When a reference is made in this Agreement to Sections, Exhibits or Schedules, such reference shall be to a Section of or Exhibit or Schedule to this Agreement unless otherwise indicated. The table of contents and headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement. Whenever the words "include," "includes" or "including" are used in this Agreement, they shall be deemed to be followed by the words "without limitation". The words "made available" shall be deemed to mean that such information was included in the Company's electronic data room or Parent's electronic data room, as applicable, or was otherwise provided to the applicable Party (as demonstrated by reasonable documentation), prior to the execution and delivery of this Agreement. The definitions contained in this Agreement are applicable to the singular as well as the plural forms of such terms. The Parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as drafted jointly by the Parties and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any provisions of this Agreement. The words "hereby," "herein," "hereof," "hereunder" and words of similar import refer to this Agreement as a whole (including any Exhibits hereto and Schedules delivered herewith) and not merely to the specific section, paragraph or clause in which such word appears. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms. Except as otherwise expressly provided herein, all references to "Dollars" or "\$" shall be deemed references to the lawful money of the United States of America. Any reference in this Agreement to a date or time shall be deemed to be such date or time in the City of New York, New York, U.S.A., unless otherwise specified. Any reference to a number of days shall refer to calendar days unless Business Days are specified. Any reference to "ordinary course of business" or any similar concept refers to the ordinary course of business of the Company and the Company Subsidiaries, taken as a whole, or of Parent and the Parent Subsidiaries, taken as a whole, in each case, consistent with past practices. References to any statute, rule or regulation are to the statute, rule or regulation as amended, modified, supplemented or replaced from time to time (and, in the case of statutes, include any rules and regulations promulgated under said statutes) and to any section of any statute, rule or regulation including any successor to said section. All terms defined in this Agreement have the defined meanings when used in any certificate or other document made or delivered pursuant hereto, unless otherwise defined therein. When reference is made herein to a Person, such reference shall be deemed to include all direct and indirect Subsidiaries of such Person unless otherwise indicated or the context otherwise requires. The terms "or", "any" and "either" are not exclusive. The word "extent" in the phrase "to the extent" shall mean the degree to which a subject or other thing extends, and such phrase shall not mean simply "if". The word "will" shall be construed to have the same meaning and effect as the word "shall".

Section 10.4 Counterparts; Effectiveness. This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original but all of which shall constitute one and the same instrument. This Agreement shall become effective when each Party shall have received counterparts thereof signed and delivered by the other Parties. Signatures transmitted electronically shall be accepted as originals for all purposes of this Agreement.

Section 10.5 Entire Agreement; Third Party Beneficiaries. This Agreement (including the Exhibits and the Parties' disclosure letters hereto) and the Confidentiality Agreement constitute the entire agreement, and supersede all prior agreements and understandings, both written and oral, between the Parties with respect to the subject matter hereof and thereof. This Agreement shall be binding upon and inure solely to the benefit of each

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Party, and nothing in this Agreement, express or implied, is intended to or shall confer upon any Person not a party to this Agreement any rights, benefits or remedies of any nature whatsoever, other than, after the Effective Time, (a) Section 7.8 (Directors' and Officers' Indemnification and Insurance) (which is intended to be for the benefit of the Indemnified Persons covered thereby and may be enforced by such Indemnified Persons), (b) the right of holders of Company Common Stock to receive the Merger Consideration and (c) the right of the holders of Company Stock Options to receive such amounts as provided for in Section 2.7.

Section 10.6 Severability. If any term or other provision of this Agreement is invalid, illegal or incapable of being enforced by any Law or public policy, all other terms and provisions of this Agreement shall nevertheless remain in full force and effect. Notwithstanding the foregoing, upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the Parties shall negotiate in good faith to modify this Agreement so as to effect the original intent of the Parties as closely as possible in an acceptable manner in order that the Transactions are consummated as originally contemplated to the greatest extent possible.

Section 10.7 Assignment. Neither this Agreement nor any of the rights, interests or obligations hereunder shall be assigned by any of the Parties, in whole or in part (whether by operation of Law or otherwise), without the prior written consent of the other Parties, and any attempt to make any such assignment without such consent shall be null and void. Subject to the preceding sentence, this Agreement will be binding upon, inure to the benefit of and be enforceable by the Parties and their respective successors and assigns.

Section 10.8 Amendment. This Agreement may be amended by the Parties, by action taken or authorized by their respective Boards of Directors, at any time before or after approval of the matters presented in connection with this Agreement by the stockholders of the Company or the stockholders of Parent, but, after such approval, no amendment shall be made which by Law or in accordance with the rules of any relevant stock exchange requires further approval by such stockholders without such further approval. This Agreement may not be amended except by an instrument in writing signed on behalf of each of the Parties.

Section 10.9 Extension; Waiver. At any time prior to the Effective Time, the Parties, by action taken or authorized by their respective Boards of Directors, may, to the extent legally allowed, (a) extend the time for the performance of any of the obligations or other acts of the other Parties, (b) waive any inaccuracies in the representations and warranties contained herein or in any document delivered pursuant hereto and (c) waive compliance with any of the agreements or, except as provided in Section 8.1(a) (Stockholder Approvals), conditions contained herein. Any agreement on the part of a Party to any such extension or waiver shall be valid only if set forth in a written instrument signed on behalf of such Party. The failure of any Party to this Agreement to assert any of its rights under this Agreement or otherwise shall not constitute a waiver of those rights.

Section 10.10 Governing Law and Venue; Waiver of Jury Trial.

(a) THIS AGREEMENT SHALL BE DEEMED TO BE MADE IN AND IN ALL RESPECTS SHALL BE INTERPRETED, CONSTRUED AND GOVERNED BY AND IN ACCORDANCE WITH THE LAW OF THE STATE OF DELAWARE WITHOUT REGARD TO ITS RULES OF CONFLICTS OF LAW THAT WOULD CAUSE THE APPLICATION OF THE LAWS OF ANY STATE OTHER THAN THE STATE OF DELAWARE. The Parties hereby irrevocably submit to the exclusive jurisdiction of the Court of Chancery of the State of Delaware, or, in the event (but only in the event) that such court does not have subject matter jurisdiction over such action or Proceeding, the Superior Court of the State of Delaware (Complex Commercial Division) or, if the subject matter jurisdiction over the action or Proceeding is vested exclusively in the federal courts of the United States of America, the United States District Court for the District of Delaware in respect of all matters arising out of or relating to this Agreement the interpretation and enforcement of the provisions of this Agreement, and of the documents referred to in this Agreement, and in respect of the Transactions, and hereby waive, and agree not to assert, as a defense in any Proceeding for the interpretation or enforcement hereof or of any such document, that it is not subject thereto or that such Proceeding may not be brought or is not maintainable in said courts or that the venue thereof may not be appropriate or that this Agreement or any such

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document may not be enforced in or by such courts, and the Parties irrevocably agree that all claims with respect to such action or Proceeding shall be heard and determined exclusively in such courts. The Parties hereby consent to and grant any such court jurisdiction over the person of such Parties solely for such purpose and over the subject matter of such dispute and agree that mailing of process or other papers in connection with any such action or Proceeding in the manner provided in [Section 10.2](#) (Notices) or in such other manner as may be permitted by Law shall be valid and sufficient service thereof.

(b) EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES, AND THEREFORE EACH SUCH PARTY HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT SUCH PARTY MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS. EACH PARTY CERTIFIES AND ACKNOWLEDGES THAT (i) NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER, (ii) EACH PARTY UNDERSTANDS AND HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (iii) EACH PARTY MAKES THIS WAIVER VOLUNTARILY AND (iv) EACH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS [SECTION 10.10\(B\)](#).

Section 10.11 Enforcement. The Parties agree that irreparable damage would occur in the event that any provision of this Agreement was not performed in accordance with its specific terms or was otherwise breached. It is accordingly agreed that (a) the Parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions hereof in any court of competent jurisdiction, this being in addition to any other remedy to which they are entitled at Law or in equity and (b) the right of specific enforcement is an integral part of the Transactions and without that right, neither the Company nor Parent would have entered into this Agreement. The Parties agree not to assert that a remedy of specific enforcement is unenforceable, invalid, contrary to Law or inequitable for any reason, and not to assert that a remedy of monetary damages would provide an adequate remedy or that the parties otherwise have an adequate remedy at Law. The Parties acknowledge and agree that any Party seeking an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement in accordance with this [Section 10.11](#) shall not be required to provide any bond or other security in connection with any such order or injunction.

* * * * *

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IN WITNESS WHEREOF, Parent, Merger Sub and the Company have caused this Agreement and Plan of Merger to be signed by their respective officers thereunto duly authorized, all as of the date first written above.

PROGENICS PHARMACEUTICALS, INC.

By: /s/ Mark R. Baker

Name: Mark R. Baker

Title: Chief Executive Officer

LANTHEUS HOLDINGS, INC.

By: /s/ Mary Anne Heino

Name: Mary Anne Heino

Title: President and Chief Executive Officer

PLATO MERGER SUB, INC.

By: /s/ Mary Anne Heino

Name: Mary Anne Heino

Title: President and Director



October 1, 2019

The Board of Directors
Lantheus Holdings, Inc.
331 Treble Cove Road
North Billerica, MA 01862

Ladies and Gentlemen:

You have requested our opinion as to the fairness, from a financial point of view, to Lantheus Holdings, Inc., a Delaware corporation (“Lantheus”), of the Exchange Ratio (as defined below) provided for in the Agreement and Plan of Merger (the “Merger Agreement”) to be entered into by and among Lantheus, Plato Merger Sub, Inc., a Delaware corporation and a wholly owned subsidiary of Lantheus (“Merger Sub”), and Progenics Pharmaceuticals, Inc., a Delaware corporation (“Progenics”). The Merger Agreement provides for the acquisition by Lantheus of Progenics through the merger of Merger Sub with and into Progenics (the “Merger”), with Progenics continuing as the surviving entity of the Merger and as a wholly owned subsidiary of Lantheus. At the effective time of the Merger (the “Effective Time”), by virtue of the Merger and without any further action on the part of Lantheus, Merger Sub, Progenics or any stockholder of Progenics, among other things, each share of the common stock, par value \$0.0013 per share, of Progenics (the “Progenics Common Stock”) issued and outstanding immediately prior to the Effective Time (other than shares of Progenics Common Stock owned by Lantheus, Progenics or any of their respective wholly owned subsidiaries) will, by virtue of the Merger Agreement (and subject to the terms and conditions thereof) and without any action on the part of the holder thereof, be converted into and thereafter represent the right to receive 0.2502 of a share (the “Exchange Ratio”) of the common stock, par value \$0.01 per share, of Lantheus (the “Lantheus Common Stock”), without interest. The Merger and the other transactions summarized above are collectively referred to herein as the “Transaction.” The terms and conditions of the Transaction are more fully set forth in the Merger Agreement.

We have been engaged by Lantheus to act as its financial advisor in connection with the proposed Transaction and we will receive a fee from Lantheus for providing such services, a portion of which is payable upon delivery of this opinion and the principal portion of which is contingent upon consummation of the Transaction. In addition, Lantheus has agreed to reimburse certain of our expenses arising, and indemnify us against certain liabilities that may arise, out of our engagement.

SVB Leerink LLC is a full-service securities firm engaged in securities trading and brokerage activities as well as investment banking and financial advisory services. In the ordinary course of business, we and our affiliates may, in the future, provide commercial and investment banking services to Lantheus, Progenics or their respective affiliates and would expect to receive customary fees for the rendering of such services. In the ordinary course of our trading and brokerage activities, we or our affiliates have in the past and may in the future hold positions, for our own account or the accounts of our customers, in equity, debt or other securities of Lantheus, Progenics or their respective affiliates.

Consistent with applicable legal and regulatory requirements, we have adopted policies and procedures to establish and maintain the independence of our research department and personnel. As a result, our research analysts may hold views, make statements or investment recommendations and/or publish research reports with

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respect to Lantheus, Progenics or the proposed Transaction and other participants in the Transaction that differ from the views of our investment banking personnel.

In connection with this opinion, we have reviewed, among other things: (i) a draft of the Merger Agreement, dated October 1, 2019; (ii) the Annual Reports on Form 10-K for the fiscal year ended December 31, 2018, as filed by each of Lantheus and Progenics with the Securities and Exchange Commission (the "SEC"); (iii) the Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2019 and June 30, 2019, as filed by each of Lantheus and Progenics with the SEC; (iv) certain Current Reports on Form 8-K, as filed by each of Lantheus and Progenics with, or furnished by each of Lantheus and Progenics to, the SEC; (v) certain publicly available research analyst reports for each of Lantheus and Progenics; and (vi) certain financial forecasts and other information and data relating to each of Lantheus and Progenics prepared by management of Lantheus and furnished to us by Lantheus for purposes of our analysis (the "Forecasts"). We conducted discussions with members of the senior management and representatives of Lantheus regarding their assessment of the Forecasts. In addition, we reviewed the historical trading prices and trading activity for the Lantheus Common Stock and the Progenics Common Stock. Furthermore, we reviewed publicly available market capitalization data regarding companies in the biopharmaceutical industry that we believed to be comparable in certain respects to each of Lantheus and Progenics. We also conducted such other financial studies and analyses and took into account such other information as we deemed appropriate.

We have assumed, without independent verification or any responsibility therefor, the accuracy and completeness of the financial, legal, regulatory, tax, accounting and other information supplied to, discussed with, or reviewed by us for purposes of this opinion and have, with your consent, relied upon such information as being complete and accurate. In that regard, we have assumed, with your consent, that the Forecasts have been reasonably prepared on bases reflecting the best currently available estimates and judgments of the management of Lantheus as to the matters covered thereby. We have relied, at your direction, on the Forecasts for purposes of our analysis and this opinion. We express no view or opinion as to the Forecasts or the assumptions on which they are based. In addition, with your consent, we have not made any independent evaluation or appraisal of any of the assets or liabilities (contingent, derivative, off-balance-sheet or otherwise) of Lantheus or Progenics, nor have we been furnished with any such evaluation or appraisal, and we have not been asked to conduct, and did not conduct, a physical inspection of the properties or assets of Lantheus or Progenics. We have assumed, with your consent, that the final executed Merger Agreement will not differ in any respect material to our analysis or this opinion from the last draft of the Merger Agreement reviewed by us. We have also assumed, with your consent, that the Transaction will be consummated on the terms set forth in the Merger Agreement and in accordance with all applicable laws and other relevant documents or requirements, without delay or the waiver, modification or amendment of any term, condition or agreement, the effect of which would be material to our analysis or this opinion and that, in the course of obtaining the necessary governmental, regulatory and other approvals, consents, releases and waivers for the Transaction, no delay, limitation, restriction, condition or other change will be imposed, the effect of which would be material to our analysis or this opinion. We have not evaluated and do not express any opinion as to the solvency or fair value of Lantheus or Progenics, or their respective abilities to pay their obligations when they come due, or as to the impact of the Transaction on such matters, under any state, federal or other laws relating to bankruptcy, insolvency or similar matters. We are not legal, regulatory, tax or accounting advisors, and we express no opinion as to any legal, regulatory, tax or accounting matters.

We express no view as to, and our opinion does not address, Lantheus' underlying business decision to proceed with or effect the Transaction, or the relative merits of the Transaction as compared to any alternative business strategies or transactions that might be available to Lantheus or in which Lantheus might engage. This

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opinion is limited to and addresses only the fairness, from a financial point of view, as of the date hereof, to Lantheus of the Exchange Ratio provided for in the Merger Agreement. We have not been asked to, nor do we express any view on, and our opinion does not address, any other term or aspect of the Merger Agreement or the Transaction, including, without limitation, the structure or form of the Transaction, or any other agreements or arrangements contemplated by the Merger Agreement or entered into in connection with or otherwise contemplated by the Transaction, including, without limitation, the fairness of the Transaction or any other term or aspect of the Transaction to, or any consideration to be received in connection therewith by, or the impact of the Transaction on, the holders of any class of securities, creditors or other constituencies of Lantheus or any other party. In addition, we express no view or opinion as to the fairness (financial or otherwise) of the amount, nature or any other aspect of any compensation to be paid or payable to any of the officers, directors or employees of Lantheus or any other party, or class of such persons in connection with the Transaction, whether relative to the Exchange Ratio or otherwise. Our opinion is necessarily based on financial, economic, monetary, currency, market and other conditions and circumstances as in effect on, and the information made available to us as of, the date hereof, and we do not have any obligation or responsibility to update, revise or reaffirm this opinion based on circumstances, developments or events occurring after the date hereof. Our opinion does not constitute a recommendation to any stockholder of Lantheus as to whether or how such holder should vote with respect to the Merger or otherwise act with respect to the Transaction or any other matter.

Our financial advisory services and the opinion expressed herein are provided for the information and assistance of the Board of Directors of Lantheus (in their capacity as directors and not in any other capacity) in connection with and for purposes of its consideration of the Transaction. This opinion has been authorized by our Fairness Opinion Review Committee.

Based upon and subject to the foregoing, including the various assumptions, qualifications and limitations set forth herein, it is our opinion that, as of the date hereof, the Exchange Ratio provided for in the Merger Agreement is fair, from a financial point of view, to Lantheus.

Very truly yours,

/s/ SVB Leerink LLC

Jefferies

Jefferies LLC

520 Madison Avenue
New York, NY 10022
tel 212.284.2300
Jefferies.com

October 1, 2019

The Board of Directors
Progenics Pharmaceuticals, Inc.
One World Trade Center - 47th Floor
New York, New York 10007

Members of the Board:

We understand that Progenics Pharmaceuticals, Inc. (“Progenics”), Lantheus Holdings, Inc. (“Lantheus”) and Plato Merger Sub, Inc., a wholly-owned subsidiary of Lantheus (“Merger Sub”), propose to enter into an Agreement and Plan of Merger (the “Merger Agreement”), pursuant to which Merger Sub will merge with and into Progenics (the “Merger”) in a transaction in which each outstanding share of common stock, par value \$0.0013 per share, of Progenics (“Progenics Common Stock”), other than shares of Progenics Common Stock held by Progenics, Lantheus, Merger Sub or any of their respective wholly-owned subsidiaries, all of which shares will be canceled, will be converted into the right to receive 0.2502 (the “Exchange Ratio”) shares of common stock, par value \$0.01 per share, of Lantheus (“Lantheus Common Stock”). The terms and conditions of the Merger are more fully set forth in the Merger Agreement.

You have asked for our opinion as to whether the Exchange Ratio set forth in the Merger Agreement is fair, from a financial point of view, to the holders of Progenics Common Stock.

In arriving at our opinion, we have, among other things:

- (i) reviewed a draft dated October 1, 2019 of the Merger Agreement;
- (ii) reviewed certain publicly available financial and other information about Progenics and Lantheus;
- (iii) reviewed certain information furnished to us and approved for our use by Progenics management, including probability-weighted financial forecasts and analyses, relating to the business, operations and prospects of Progenics (the “Progenics Forecasts”);
- (iv) reviewed certain information furnished to us and approved for our use by Progenics management, including financial forecasts and analyses, relating to the business, operations and prospects of Lantheus (the “Progenics–Lantheus Forecasts”);
- (v) reviewed certain information furnished to us by Lantheus management, including financial forecasts and analyses, relating to the business, operations and prospects of Lantheus (the “Lantheus Forecasts”);
- (vi) reviewed certain information furnished to us by Lantheus management, including financial forecasts and analyses, relating to the business, operations and prospects of Progenics (the “Lantheus–Progenics Forecasts”);

- (vii) discussed or reviewed with members of senior management of Progenics the matters described in clauses (ii) – (vi) above, and discussed or reviewed with members of senior management of Lantheus the matters described in clauses (ii), (v) and (vi) above;
- (viii) reviewed the relative contributions of Progenics and Lantheus to the combined company on a pro forma basis;
- (ix) reviewed the share trading price history and valuation multiples for Progenics Common Stock and Lantheus Common Stock and compared them with those of certain publicly traded companies that we deemed relevant; and
- (x) conducted such other financial studies, analyses and investigations as we deemed appropriate.

In our review and analysis and in rendering this opinion, we have assumed and relied upon, but have not assumed any responsibility to independently investigate or verify, the accuracy and completeness of all financial and other information that was supplied or otherwise made available by Progenics or Lantheus or that was publicly available to us (including, without limitation, the information described above), or that was otherwise reviewed by us. We have relied on assurances of the management of Progenics that it is not aware of any facts or circumstances that would make such information inaccurate or misleading. In our review, we did not obtain any independent evaluation or appraisal of any of the assets or liabilities of, nor did we conduct a physical inspection of any of the properties or facilities of, Progenics or Lantheus, nor have we been furnished with any such evaluations or appraisals, nor do we assume any responsibility to obtain any such evaluations or appraisals.

With respect to the financial forecasts provided to and examined by us, we note that projecting future results of any company is inherently subject to uncertainty. With respect to the Progenics Forecasts and the Progenics-Lantheus Forecasts, Progenics has informed us, and we have assumed, that they were reasonably prepared on bases reflecting the best currently available estimates and good faith judgments of the management of Progenics as to the future financial performance of each of Progenics and Lantheus. With respect to the Lantheus Forecasts and the Lantheus-Progenics Forecasts, Lantheus has informed us, and we have assumed, that they were reasonably prepared on bases reflecting the best currently available estimates and good faith judgments of the management of Lantheus as to the future financial performance of each of Lantheus and Progenics. At the direction of Progenics management, we have used and relied upon the Progenics Forecasts and the Progenics-Lantheus Forecasts in our review and analysis and in rendering our opinion. We express no opinion as to the Progenics Forecasts, the Progenics-Lantheus Forecasts, the Lantheus Forecasts or the Lantheus-Progenics Forecasts or the assumptions on which they are made, and we have assumed that the Progenics Forecasts and the Progenics-Lantheus Forecasts will be realized in the amounts and at the times projected.

Our opinion is based on economic, monetary, regulatory, market and other conditions existing and which can be evaluated as of the date hereof. We expressly disclaim any undertaking or obligation to advise any person of any change in any fact or matter affecting our opinion of which we become aware after the date hereof.

We have made no independent investigation of any legal, regulatory, accounting or tax matters affecting Progenics or Lantheus, and we have assumed the correctness in all respects material to our analysis of all legal, regulatory, accounting and tax advice given to Progenics and its Board of Directors, including, without limitation, advice as to the legal, regulatory, accounting and tax consequences of the terms of, and transactions contemplated by, the Merger Agreement to Progenics. In addition, in preparing this opinion, we have not taken into account any tax consequences of the transaction to any holder of Progenics Common Stock. You have advised us that the Merger will qualify as a tax-free reorganization for federal income tax purposes. We have assumed that the final form of the Merger Agreement will be substantially similar to the last draft reviewed by us. We have also assumed that the Merger will be consummated in accordance with the terms of the Merger

Agreement, without waiver, modification or amendment of any term, condition or agreement and in compliance with all applicable laws, documents and other requirements and that in the course of obtaining the necessary regulatory or third party approvals, consents and releases for the Merger, no delay, limitation, restriction or condition will be imposed that would have an adverse effect on Progenics, Lantheus or the contemplated benefits of the Merger.

It is understood that our opinion is for the use and benefit of the Board of Directors of Progenics (in its capacity as such) in its consideration of the Merger, and our opinion does not address the relative merits of the transactions contemplated by the Merger Agreement as compared to any alternative transaction or opportunity that might be available to Progenics, nor does it address the underlying business decision by Progenics to engage in the Merger or the terms of the Merger Agreement or the documents referred to therein. Our opinion does not constitute a recommendation as to how any holder of Progenics Common Stock should vote with respect to the Merger or any matter related thereto. In addition, you have not asked us to address, and this opinion does not address, the fairness to, or any other consideration of, the holders of any class of securities, creditors or other constituencies of Progenics, other than the holders of Progenics Common Stock. We express no opinion as to the prices at which shares of Progenics Common Stock or Lantheus Common Stock will trade at any time. Furthermore, we do not express any view or opinion as to the fairness, financial or otherwise, of the amount or nature of any compensation payable to or to be received by any officers, directors or employees of any parties to the Merger, or any class of such persons, in connection with the Merger, whether relative to the Exchange Ratio or otherwise. Our opinion has been authorized by the Fairness Committee of Jefferies LLC.

We have been engaged by Progenics to act as financial advisor to Progenics in connection with the Merger and will receive a fee for our services, a portion of which is payable upon delivery of this opinion and a significant portion of which is payable contingent upon consummation of the Merger. We also will be reimbursed for expenses incurred. Progenics has agreed to indemnify us against liabilities arising out of or in connection with the services rendered and to be rendered by us under such engagement. We have, in the past, provided financing services and have, in the past, provided and are currently providing financial advisory services to Progenics, and may continue to do so and have received, and may receive, fees for the rendering of such services. We maintain a market in the securities of Progenics and Lantheus and, in the ordinary course of our business, we and our affiliates may trade or hold securities of Progenics or Lantheus and/or their respective affiliates for our own account and for the accounts of our customers and, accordingly, may at any time hold long or short positions in those securities. In addition, we may seek to, in the future, provide financial advisory and financing services to Progenics, Lantheus or entities that are affiliated with Progenics or Lantheus, for which we would expect to receive compensation. Except as otherwise expressly provided in our engagement letter with Progenics, our opinion may not be used or referred to by Progenics, or quoted or disclosed to any person in any manner, without our prior written consent.

Based upon and subject to the foregoing, we are of the opinion that, as of the date hereof, the Exchange Ratio set forth in the Merger Agreement is fair, from a financial point of view, to the holders of Progenics Common Stock.

Very truly yours,

/s/ JEFFERIES LLC

JEFFERIES LLC

Part II
INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 20. Indemnification of Directors and Officers

Section 145 of the DGCL provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement in connection with specified actions, suits or proceedings, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation, a "derivative action"), if they acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal actions or proceedings, had no reasonable cause to believe their conduct was unlawful. A similar standard is applicable in the case of derivative actions, except that indemnification only extends to expenses (including attorneys' fees) actually and reasonably incurred in connection with the defense or settlement of such action, and the DGCL requires court approval before there can be any indemnification where the person seeking indemnification has been found liable to the corporation. The DGCL provides that it is not exclusive of other indemnification that may be granted by a corporation's by-laws, disinterested director vote, stockholder vote, agreement or otherwise.

Under the terms of Lantheus Holdings' by-laws and subject to the applicable provisions of Delaware law, Lantheus Holdings has agreed to indemnify its directors and officers and, subject to the discretion of the board of directors, any employee or agent of Lantheus Holdings, against expenses actually and reasonably incurred in connection with any actual, threatened or completed proceeding, in which such director or officer may be involved by reason of being or having been a director or officer of Lantheus Holdings, or of serving or having served at Lantheus Holdings' request as a director, officer, trustee, general partner, managing member, fiduciary, employee or agent of any other corporation, constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger to which Lantheus Holdings (or any of their wholly-owned subsidiaries) is a party, limited liability company, partnership, joint venture, trust, employee benefit plan or other enterprise.

Section 102(b)(7) of the DGCL permits a provision in the certificate of incorporation of each corporation organized thereunder, such as Lantheus Holdings, eliminating or limiting, with certain exceptions, the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. Lantheus Holdings' certificate of incorporation eliminates the liability of directors to the extent permitted by the DGCL.

Lantheus Holdings carries directors' and officers' liability insurance that covers certain liabilities and expenses of its directors and officers.

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Item 21. Exhibits and Financial Statement Schedules

EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Description</u>
2.1	<u>Agreement and Plan of Merger, dated as of October 1, 2019, among Lantheus Holdings, Inc., Plato Merger Sub, Inc. and Progenics Pharmaceuticals, Inc. (included as Annex A to the joint proxy statement/prospectus which is part of this registration statement and incorporated by reference herein) (schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Lantheus Holdings agrees to furnish supplementally a copy of such schedules and exhibits, or any section thereof, to the SEC upon request).</u>
3.1	<u>Amended and Restated Certificate of Incorporation of Lantheus Holdings, Inc. (incorporated herein by reference to Exhibit 3.1 to the Current Report on Form 8-K of Lantheus Holdings, Inc. dated April 26, 2018 and filed April 27, 2018).</u>
3.2	<u>Amended and Restated Bylaws of Lantheus Holdings, Inc. (incorporated herein by reference to Exhibit 3.2 to the Current Report on Form 8-K of Lantheus Holdings, Inc. dated April 26, 2018 and filed April 27, 2018).</u>
4.1	<u>Specimen Common Stock Certificate of Lantheus Holdings, Inc. (incorporated herein by reference to Exhibit 4.1 to the Current Report on Form 8-K of Lantheus Holdings, Inc., dated June 30, 2015).</u>
5.1	Opinion of White & Case LLP regarding the validity of the securities being issued.*
8.1	Opinion of White & Case LLP regarding certain tax matters.*
8.2	Opinion of O'Melveny & Meyers LLP regarding certain tax matters.*
21.1	<u>Subsidiaries of Lantheus Holdings, Inc. (incorporated by reference to Exhibit 21.1 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2018).</u>
23.1	<u>Consent of Deloitte & Touche LLP Independent Registered Public Accounting Firm of Lantheus Holdings, Inc.</u>
23.2	<u>Consent of Ernst & Young LLP Independent Registered Public Accounting Firm of Progenics Pharmaceuticals, Inc.</u>
23.3	Consent of White & Case LLP (included as part of its opinion filed as Exhibit 5.1).*
23.4	Consent of White & Case LLP (included in Exhibit 8.1 hereto).*
23.5	Consent of O'Melveny & Meyers LLP (included in Exhibit 8.2 hereto).*
24.1	<u>Powers of Attorney (included on the signature page of this Form S-4).</u>
99.1	<u>Form of Proxy Card of Lantheus Holdings, Inc.</u>
99.2	<u>Form of Proxy Card of Progenics Pharmaceuticals, Inc.</u>
99.3	<u>Consent of SVB Leerink LLC.</u>
99.4	<u>Consent of Jefferies LLC.</u>

* To be filed by amendment.

Item 22. Undertakings

The undersigned registrant hereby undertakes:

- (a) (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
- (i) To include any prospectus required by Section 10(a)(3) of the Securities Act.

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- (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.
 - (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
 - (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
 - (4) That, for the purpose of determining liability under the Securities Act to any purchaser: each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.
 - (5) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
 - (6) That prior to any public reoffering of the securities registered hereunder through use of a prospectus which is a part of this registration statement, by any person or party who is deemed to be an underwriter within the meaning of Rule 145(c), the issuer undertakes that such reoffering prospectus will contain the information called for by the applicable registration form with respect to reofferings by persons who may be deemed underwriters, in addition to the information called for by the other Items of the applicable form.
 - (7) That every prospectus (i) that is filed pursuant to paragraph (6) immediately preceding, or (ii) that purports to meet the requirements of section 10(a)(3) of the Act and is used in connection with an offering of securities subject to Rule 415, will be filed as a part of an amendment to the registration statement and will not be used until such amendment is effective, and that, for purposes of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (b) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the

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registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

- (c) The undersigned registrant hereby undertakes to respond to requests for information that is incorporated by reference into the prospectus pursuant to Items 4, 10(b), 11 or 13 of this form, within one business day of receipt of such request, and to send the incorporated documents by first class mail or other equally prompt means. This includes information contained in documents filed subsequent to the effective date of the registration statement through the date of responding to the request.
- (d) The undersigned registrant hereby undertakes to supply by means of a post-effective amendment all information concerning a transaction, and the company being acquired involved therein, that was not the subject of and included in this registration statement when it became effective.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of North Billerica, Massachusetts, on November 12, 2019.

LANTHEUS HOLDINGS, INC.

By: /s/ Mary Anne Heino
Mary Anne Heino
President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Mary Anne Heino, Robert J. Marshall, Jr. and Michael P. Duffy as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign the name of each of the undersigned in his or her capacity to any and all amendments (including any post-effective amendments) and supplements to this Registration Statement, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto such said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing necessary or advisable to be done, as fully to all intents and purposes as the undersigned might or could do in person, and each of the undersigned hereby ratifies and confirms that the said attorneys-in-fact or agents shall do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Mary Anne Heino</u> Mary Anne Heino	<i>Chief Executive Officer, President and Director (Principal Executive Officer)</i>	November 12, 2019
<u>/s/ Robert J. Marshall, Jr.</u> Robert J. Marshall, Jr.	<i>Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)</i>	November 12, 2019
<u>/s/ Brian Markison</u> Brian Markison	<i>Chairman of the Board of Directors</i>	November 12, 2019
<u>/s/ James C. Clemmer</u> James C. Clemmer	<i>Director</i>	November 12, 2019
<u>/s/ Samuel R. Leno</u> Samuel R. Leno	<i>Director</i>	November 12, 2019
<u>/s/ Julie H. McHugh</u> Julie H. McHugh	<i>Director</i>	November 12, 2019
<u>/s/ Gary J. Pruden</u> Gary J. Pruden	<i>Director</i>	November 12, 2019

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<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Kenneth J. Pucel</u> Kenneth J. Pucel	Director	November 12, 2019
<u>/s/ Dr. Frederick A. Robertson</u> Dr. Frederick A. Robertson	Director	November 12, 2019
<u>/s/ Dr. Derace L. Schaffer</u> Dr. Derace L. Schaffer	Director	November 12, 2019
<u>/s/ Dr. James H. Thrall</u> Dr. James H. Thrall	Director	November 12, 2019

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-4 of our report dated February 20, 2019, relating to the financial statements of Lantheus Holdings, Inc. and its subsidiaries, appearing in the Annual Report on Form 10-K of Lantheus Holdings, Inc. for the year ended December 31, 2018, and to the reference to us under the heading “Experts” in the joint proxy statement/prospectus, which is part of this Registration Statement.

/s/ Deloitte & Touche LLP

Boston, Massachusetts
November 12, 2019

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” in the Registration Statement (Form S-4) and related joint proxy statement/prospectus of Lantheus Holdings, Inc. and to the incorporation by reference therein of our reports dated March 14, 2019, with respect to the consolidated financial statements of Progenics Pharmaceuticals, Inc., incorporated by reference in its Annual Report (Form 10-K) for the year ended December 31, 2018, and the financial statement schedules of Progenics Pharmaceuticals, Inc., and the effectiveness of internal control over financial reporting of Progenics Pharmaceuticals, Inc., included therein, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Stamford, Connecticut

November 12, 2019

PRELIMINARY COPY-SUBJECT TO COMPLETION

PRELIMINARY COPY-SUBJECT TO COMPLETION



SPECIAL MEETING OF LANTHEUS HOLDINGS, INC.

**Special Meeting of Lantheus Holdings, Inc.
to be held on []
for Holders as of []**

Date: []
Time: []
Place: []

This proxy is being solicited on behalf of the Board of Directors

Please make your marks like this: Use dark black pencil or pen only

VOTE BY:

The Board of Directors Recommends a Vote **FOR** proposals 1 and 2.



INTERNET



TELEPHONE

- 1: Stock Issuance Proposal:** To approve the issuance of shares of Lantheus Holdings common stock, par value \$0.01 per share, in the merger contemplated by the Agreement and Plan of Merger, dated as of October 1, 2019, as it may be amended from time to time, among Lantheus Holdings, Inc., Plato Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of Lantheus Holdings, Inc., and Progenics Pharmaceuticals, Inc., a Delaware corporation, pursuant to which Plato Merger Sub, Inc. will be merged with and into Progenics Pharmaceuticals, Inc., with Progenics Pharmaceuticals, Inc. surviving the merger as a wholly-owned subsidiary of Lantheus Holdings, Inc.
- For Against Abstain

Go To **www.proxypush.com/LNTH**

- Cast your vote online 24 hours a day/7 days a week.
- Have your Proxy Card/Voting Instructions Form ready.
- View Meeting Documents.

- Call **866-240-5317**
- Use any touch-tone telephone toll-free 24 hours a day/7 days a week.
 - **Have your Proxy Card/Voting Instruction Form ready.**
 - Follow the simple recorded instructions.

OR



MAIL

- OR**
- Mark, sign and date your Proxy Card/Voting Instruction Form.
 - Detach your Proxy Card/Voting Instruction Form.
 - Return your Proxy Card/Voting Instruction Form in the postage-paid envelope provided.

The undersigned hereby appoints Mary Anne Heino, Robert J. Marshall, Jr., Michael P. Duffy, Daniel Niedzwiecki and Eric Green and each or any of them, as the true and lawful attorneys of the undersigned, with full power of substitution and revocation, and authorizes them, and each of them, to vote all the shares of capital stock of Lantheus Holdings, Inc. which the undersigned is entitled to vote at said meeting and any adjournment thereof upon the matters specified and upon such other matters as may be properly brought before the meeting or any adjournment or postponement thereof, conferring authority upon such true and lawful attorneys to vote in their discretion on such other matters as may properly come before the meeting and revoking any proxy heretofore given.

THE SHARES REPRESENTED BY THIS PROXY WILL BE VOTED AS DIRECTED OR, IF NO DIRECTION IS GIVEN, SHARES WILL BE VOTED FOR PROPOSALS 1 AND 2.

- 2: Adjournment Proposal:** To approve the adjournment from time to time of the special meeting of stockholders of Lantheus Holdings, if necessary to solicit additional proxies if there are not sufficient votes at the time of the Lantheus Holdings special meeting, or any adjournment or postponement thereof, to approve the stock issuance proposal.
- For Against Abstain

To attend the meeting and vote your shares in person, please mark this box.

Authorized Signatures - This section must be completed for your Instructions to be executed.



**PROXY TABULATOR FOR
LANTHEUS HOLDINGS, INC.
P.O. BOX 8016
CARY, NC 27512-9903**

Please Sign Here Please Date Above

Please Sign Here Please Date Above

Please sign exactly as your name(s) appears on your stock certificate. If held in joint tenancy, all persons should sign. Trustees, administrators, etc., should include title and authority. Corporations should provide full name of corporation and title of authorized officer signing the proxy.

↑ Please separate carefully at the perforation and return just this portion in the envelope provided. ↑

PRELIMINARY COPY – SUBJECT TO COMPLETION**YOUR VOTE IS IMPORTANT. PLEASE VOTE TODAY.****Vote by Internet – QUICK AND EASY****IMMEDIATE – 24 Hours a Day, 7 Days a Week or by Mail****PROGENICS PHARMACEUTICALS, INC.**

As a shareholder of Progenics Pharmaceuticals, Inc., you have the option of voting your shares electronically through the Internet, eliminating the need to return your proxy card. Your electronic vote authorizes the named proxies to vote your shares in the same manner as if you marked, signed, dated and returned your proxy card. Votes submitted electronically over the Internet must be received by 11:59 p.m., Eastern Time, on ().

Vote by Internet

Access the Website
and submit your proxy:
www.proxyvoting.com/PGNX

Vote by Telephone

Call Toll-Free using a
touch-tone telephone:
1-877-587-0765

Vote by Mail

Sign and return your proxy
in the postage-paid
envelope provided.

Important Notice Regarding the Availability of Proxy Materials for the Special Meeting of Shareholders:

The Notice and Proxy Statement are Available at: www.Stockholderdocs.com/PGNX



FOLD HERE • DO NOT SEPARATE • INSERT IN ENVELOPE PROVIDED

**PROGENICS PHARMACEUTICALS, INC.****SPECIAL MEETING OF SHAREHOLDERS**

() () A.M. Local Time

This proxy is solicited by the Board of Directors

The undersigned hereby acknowledge(s) receipt of the Notice of the Annual Meeting and Proxy Statement, hereby appoint(s) () and Patrick Fabbio, and each of them, acting individually or in the absence of others, as proxies, each with the full power of substitution and re-substitution, and hereby authorize(s) them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of common stock of PROGENICS PHARMACEUTICALS, INC. that the shareholder(s) is/are entitled to vote at the Special Meeting of Shareholders to be held at () A.M. local time on () at () and any and all postponements or adjournments thereof. The undersigned hereby revoke(s) all proxies previously given by the under-signed with respect to the Special Meeting of Shareholders, including any previously given by telephone or internet.

This proxy card, when properly executed, will be voted in the manner directed herein. If no such direction is made, the proxies will have authority to vote “FOR” Proposal 1 and “FOR” Proposals 2 and 3, in accordance with the Board of Directors’ recommendations.

(Continued, and to be marked, dated and signed, on the other side)

PROGENICS PHARMACEUTICALS, INC.

If you have questions or require any assistance with voting your shares, please contact the Company's proxy solicitor listed below:



1407 Broadway, 27th Floor
New York, New York 10018
Call Collect (212) 929-5500

or

Toll-Free (800) 322-2885

Email: proxy@mackenziepartners.com

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED

PROGENICS PHARMACEUTICALS, INC.

Please mark your votes like this



The Board of Directors recommends you vote **FOR** each of the following Proposals

Proposal 3: to consider and vote on a proposal to approve, on an advisory (non-binding) basis, the compensation that will or may be paid or provided by Progenics to its named executive officers in connection with the merger.	For <input type="checkbox"/>	Against <input type="checkbox"/>	Abstain <input type="checkbox"/>
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Proposal 1: to consider and vote on a proposal to adopt the Agreement and Plan of Merger, dated as of October 1, 2019, as it may be amended from time to time, among Lantheus Holdings, Inc., a Delaware corporation, Plato Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of Lantheus Holdings, and Progenics, pursuant to which Plato Merger Sub, Inc. will be merged with and into Progenics, with Progenics surviving the merger as a wholly-owned subsidiary of Lantheus Holdings (a copy of the merger agreement is attached as Annex A to the accompanying joint proxy statement/prospectus);	For <input type="checkbox"/>	Against <input type="checkbox"/>	Abstain <input type="checkbox"/>
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Proposal 2: to consider and vote on a proposal to approve the adjournment from time to time of the special meeting of stockholders of Progenics, which is referred to in this notice as the Progenics special meeting, if necessary to solicit additional proxies if there are not sufficient votes to adopt the merger agreement at the time of the Progenics special meeting or any adjournment or postponement thereof; and	For <input type="checkbox"/>	Against <input type="checkbox"/>	Abstain <input type="checkbox"/>
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Signature _____

Signature, if held jointly (Title) _____

Date _____, 2020

Note: Please sign exactly as name(s) appear(s) hereon. When signing as attorney, executor, administrator or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.

CONSENT OF SVB LEERINK LLC

We hereby consent to the use of our opinion letter dated October 1, 2019 to the board of directors of Lantheus Holdings, Inc., included as Annex B to the joint proxy statement/prospectus which forms a part of the Registration Statement on Form S-4 of Lantheus Holdings, Inc., filed on November 12, 2019, and to the references to such opinion in such joint proxy statement/prospectus under the captions: “SUMMARY—Opinion of Lantheus Holdings’ Financial Advisor,” “LANTHEUS HOLDINGS PROPOSAL I: APPROVAL OF THE STOCK ISSUANCE AND PROGENICS PROPOSAL I: ADOPTION OF THE MERGER AGREEMENT—Background of the Merger and Certain Other Developments,” “LANTHEUS HOLDINGS PROPOSAL I: APPROVAL OF THE STOCK ISSUANCE AND PROGENICS PROPOSAL I: ADOPTION OF THE MERGER AGREEMENT—Lantheus Holdings’ Reasons for the Merger; Recommendation of the Lantheus Holdings Board of Directors that Lantheus Holdings Stockholders Approve the Stock Issuance” and “LANTHEUS HOLDINGS PROPOSAL I: APPROVAL OF THE STOCK ISSUANCE AND PROGENICS PROPOSAL I: ADOPTION OF THE MERGER AGREEMENT—Opinion of Lantheus Holdings’ Financial Advisor”. In giving such consent, we do not admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission thereunder, nor do we thereby admit that we are experts with respect to any part of such Registration Statement within the meaning of the term “expert” as used in the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission thereunder. Additionally, such consent does not cover any amendments to the Registration Statement.

/s/ SVB LEERINK LLC

SVB LEERINK LLC

New York, New York
November 12, 2019

The Board of Directors
Progenics Pharmaceuticals, Inc.
One World Trade Center – 47th Floor
New York, New York 10007

The Board of Directors:

We hereby consent to the inclusion of our opinion letter, dated October 1, 2019, to the Board of Directors (in its capacity as such) of Progenics Pharmaceuticals, Inc. (“Progenics”) included as Annex C to, and to the reference to such opinion letter under the captions “SUMMARY—Opinion of Progenics’ Financial Advisor”, “LANTHEUS HOLDINGS PROPOSAL I: APPROVAL OF THE STOCK ISSUANCE AND PROGENICS PROPOSAL I: ADOPTION OF THE MERGER AGREEMENT—Background of the Merger and Certain Other Developments”, “LANTHEUS HOLDINGS PROPOSAL I: APPROVAL OF THE STOCK ISSUANCE AND PROGENICS PROPOSAL I: ADOPTION OF THE MERGER AGREEMENT—Progenics’ Reasons for the Merger; Recommendation of the Progenics Board of Directors that Progenics Stockholders Adopt the Merger Agreement”, and “LANTHEUS HOLDINGS PROPOSAL I: APPROVAL OF THE STOCK ISSUANCE AND PROGENICS PROPOSAL I: ADOPTION OF THE MERGER AGREEMENT—Opinion of Progenics’ Financial Advisor” in the joint proxy statement/prospectus relating to the proposed merger involving Progenics, which joint proxy statement/prospectus forms a part of the Registration Statement on Form S-4 of Lantheus Holdings, Inc. filed with the Securities and Exchange Commission on the date hereof (the “Registration Statement”). By giving the foregoing consent, we do not thereby admit that we are experts with respect to any part of such Registration Statement within the meaning of the term “expert” as used in, or that we come within the category of persons whose consent is required under, the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/s/ JEFFERIES LLC

JEFFERIES LLC

November 12, 2019