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

SCHEDULE 13D
(Amendment No. 1)

Under the Securities Exchange Act of 1934

Perspective Therapeutics, Inc.
(Name of Issuer)

Common Stock, par value \$0.001
(Title of Class of Securities)

46489V104
(CUSIP Number)

Lantheus Holdings, Inc.
201 Burlington Road, South Building
Bedford, MA 01730

Attention: Daniel Niedzwiecki
(978) 671-8001
(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

March 6, 2024
(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of § 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box .

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See § 240.13d-7(b) for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

SCHEDULE 13D

CUSIP No. 46489V104

1	NAME OF REPORTING PERSONS Lantheus Holdings, Inc.
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>
3	SEC USE ONLY
4	SOURCE OF FUNDS (See Instructions) WC
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER 0
	8 SHARED VOTING POWER 116,773,394(1)
	9 SOLE DISPOSITIVE POWER 0
	10 SHARED DISPOSITIVE POWER 116,773,394(1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 116,773,394
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions) <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 19.90% (2)
14	TYPE OF REPORTING PERSON (See Instructions) CO

- (1) Represents shares directly held by Lantheus Alpha Therapy, LLC ("Lantheus Alpha"), a wholly owned direct subsidiary of Lantheus Holdings, Inc. ("Lantheus Holdings"). Lantheus Holdings and Lantheus Alpha may each be deemed to have shared voting and dispositive power over all of the shares.
- (2) Based upon 586,800,977 shares of the Issuer's Common Stock issued and outstanding after giving effect to the closing of a private placement transaction (the "Second Private Placement") on March 6, 2024, as represented by the Issuer to Lantheus Alpha in the Investment Agreement, dated as of March 4, 2024 (the "Second Investment Agreement"), by and among Lantheus Alpha, the Issuer and certain other purchasers identified on Schedule 1 thereto (the "Investors").

1	NAME OF REPORTING PERSONS Lantheus Alpha Therapy, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
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13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 19.90% (2)	
14	TYPE OF REPORTING PERSON (See Instructions) CO	

(1) Represents shares directly held by Lantheus Alpha, a wholly owned direct subsidiary of Lantheus Holdings. Lantheus Holdings and Lantheus Alpha may each be deemed to have shared voting and dispositive power over all of the shares.

(2) Based upon 586,800,977 shares of the Issuer's Common Stock issued and outstanding after giving effect to the closing of the Second Private Placement on March 6, 2024, as represented by the Issuer to Lantheus Alpha in the Second Investment Agreement.

This Amendment No. 1 (“Amendment No. 1”), is filed with respect to the shares of common stock, par value \$0.001 per share (the “Common Stock”), of Perspective Therapeutics, Inc., a Delaware corporation (the “Issuer”). This Amendment No. 1 amends and supplements the initial statement on Schedule 13D filed by Lantheus Alpha and Lantheus Holdings (each a “Reporting Person”, and collectively, the “Reporting Persons”) on February 1, 2024 (the “Initial Statement”, and as amended by this Amendment No. 1, the “Statement”). Except as specifically provided herein, this Amendment No. 1 does not modify any of the information previously reported in the Initial Statement. Capitalized terms used but not defined in this Amendment No. 1 shall have the meanings ascribed to them in the Initial Statement.

Item 2. Identity and Background

Item 2 of the Initial Statement is hereby amended by deleting Schedule A in its entirety and replacing it with Schedule A attached hereto.

Item 3. Source and Amount of Funds or Other Consideration

Item 3 of the Initial Statement is hereby amended and supplemented to add the following:

On March 6, 2024, Lantheus Alpha purchased an additional 60,431,039 shares of the Issuer’s Common Stock at a purchase price per share of \$0.95 in the Second Private Placement (the “Second Purchase”). The total consideration for the Second Purchase was approximately \$57.4 million in cash.

The source of funds for the transactions described in this Item 3 was general working capital and cash on hand of the Reporting Persons.

Item 4. Purpose of Transaction

Item 4 of the Initial Statement is hereby amended and supplemented to add the following:

The acquisition by the Reporting Persons of the Issuer’s securities as described herein was effected pursuant to the Second Investment Agreement, a copy of which is attached hereto as Exhibit 99.8. The key terms of the Second Investment Agreement are described in Item 6 of this Amendment No. 1, as amended. The Reporting Persons acquired their securities for investment purposes and otherwise in furtherance of the purpose of the Option Agreement, including the Options described in the Initial Statement.

Subject to the standstill restrictions in the Investment Agreement, the Reporting Persons intend to continue to review their investment in the Issuer on an ongoing basis and, depending on various factors, including, without limitation, the Issuer’s business, results of operations and financial position, the trading price of the Common Stock, conditions in the capital markets and general economic, political and industry conditions, the Reporting Persons may, in the future, take such actions with respect to their shares of Common Stock as they deem appropriate, including, without limitation: purchasing additional shares of Common Stock (which may be in connection with an Acquisition Transaction or through the exercise of Participation Rights pursuant to the Investment Agreement, as described in the Initial Statement); selling shares of Common Stock (including in registered offerings pursuant to (i) the Registration Rights Agreement, as described in the Initial Statement and/or (ii) the Second Registration Rights Agreement, as described below in Item 6 of this Amendment No. 1, as amended); or taking any other action with respect to the Issuer or any of its securities in any manner permitted by law or with respect to any and all matters referred to in subparagraphs (a) through (j) of Item 4 of Schedule 13D. Further, the Reporting Persons have the right to designate one person to attend all meetings of the board of directors of the Issuer in a nonvoting observer capacity, and, as such, may have influence over the corporate activities of the Issuer, including activities which may relate to items described in subparagraphs (a) through (j) of Item 4 of Schedule 13D.

Except as described in this Statement, each of the Reporting Persons does not have any present plans or proposals that relate to or would result in any of the actions described above and in subparagraphs (a) through (j) of Item 4 of Schedule 13D. However, subject to compliance with the agreements described above, the Reporting Persons, at any time and from time to time, may review, reconsider and change their position or their purpose or develop such plans.

Item 5. Interest in Securities of the Issuer

Item 5 of the Initial Statement is hereby amended and restated in its entirety as follows:

(a)-(b)

Based upon 586,800,977 shares of the Issuer’s Common Stock issued and outstanding after the closing of the Second Private Placement on March 6, 2024, as represented by the Issuer to Lantheus Alpha in the Second Investment Agreement.

Based on the foregoing, the aggregate number and percentage of shares of Common Stock beneficially owned by the Reporting Persons is 116,773,394, constituting 19.90% of the shares outstanding as of March 6, 2024.

Number of shares of Common Stock as to which the Reporting Persons have:

	<u>Common Stock Held</u>
Voting Authority	
Sole:	0
Shared:	116,773,394
Total:	116,773,394

	<u>Common Stock Held</u>
Dispositive Authority	
Sole:	0
Shared:	116,773,394
Total:	116,773,394

To the best knowledge of each of the Reporting Persons, none of the individuals listed on Schedule A hereto beneficially owns any of the Issuer’s Common Stock.

(c) Except as reported in this Statement, neither the Reporting Persons nor, to the best knowledge of each of the Reporting Persons, any of the individuals listed on Schedule A hereto have effected any transactions in the Common Stock during the past sixty (60) days.

(d) Except with reference to the Agreements and the transactions contemplated by those Agreements, and except as set forth in this Statement, none of the Reporting Persons nor, to the knowledge of each of the Reporting Persons, any of the persons set forth on Schedule A hereto has the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the securities of Issuer reported herein.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationship with Respect to Securities of the Issuer

Item 6 of the Initial Statement is hereby amended and supplemented to add the following:

Second Investment Agreement

On March 4, 2024, the Issuer entered into the Second Investment Agreement with Lantheus Alpha and the Investors thereto, pursuant to which the Issuer agreed to sell and issue to Lantheus Alpha and the Investors in the Second Private Placement certain shares of the Issuer’s Common Stock, subject to certain closing conditions. The closing of the Second Purchase occurred on March 6, 2024 and raised approximately \$87.4 million of gross proceeds, before underwriting discounts and commissions and estimated expenses of such offering. Pursuant to the Second Investment Agreement, upon the closing of the Second Purchase, the Issuer entered into the Second Registration Rights Agreement with Lantheus Alpha and the Investors, as described below.

The foregoing description of the Second Investment Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of such agreement, which is attached as Exhibit 99.8 hereto and incorporated herein by reference.

Second Registration Rights Agreement

On March 6, 2024, the Issuer, Lantheus Alpha and the Investors entered into a registration rights agreement (the “Second Registration Rights Agreement”) in accordance with the requirements of the Second Investment Agreement, pursuant to which the Issuer agreed to register the resale of the shares purchased in the Second Private Placement. Under the Second Registration Rights Agreement, the Issuer has agreed to file a registration statement covering the resale of the Shares no later than March 29, 2024. The Issuer has agreed to use reasonable best efforts to cause such registration statement to become effective as promptly as practicable after the filing thereof but in any event on or prior to the Effectiveness Deadline (as defined in the Second Registration Rights Agreement), and to keep such registration statement continuously effective until the date the shares covered by such registration statement have been sold or may be resold pursuant to Rule 144 without restriction. The Issuer has also agreed, among other things, to pay all reasonable fees and expenses (excluding any underwriters’ discounts and commissions and all fees and expenses of legal counsel, accountants and other advisors for Lantheus Alpha and the Investors except as specifically provided in the Second Registration Rights Agreement) incident to the performance of or compliance with the Second Registration Rights Agreement by the Issuer.

The Issuer, Lantheus Alpha and the Investors granted each other customary indemnification rights in connection with the registration statement. The Issuer made additional customary covenants, including with respect cooperating in underwritten offerings of the Shares and taking steps to allow the Shares to be resold pursuant to Rule 144 under the Securities Act of 1933.

The foregoing description of the Second Registration Rights Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of such agreement, which is attached as Exhibit 99.9 hereto and incorporated herein by reference.

Item 7. Materials to Be Filed as Exhibits

Item 7 of the Initial Statement is hereby amended and supplemented to add the following:

- | | |
|--------------|--|
| Exhibit 99.8 | Investment Agreement between the Issuer, Lantheus Alpha Therapy, LLC and the purchasers listed on Schedule 1 thereto, dated March 4, 2024 (incorporated by reference to Exhibit 10.1 of the Issuer’s Current Report on Form 8-K filed with the Securities and Exchange Commission on March 6, 2024). |
| Exhibit 99.9 | Registration Rights Agreement between the Issuer, Lantheus Alpha Therapy, LLC and the other parties thereto, dated March 6, 2024 (incorporated by reference to Exhibit 10.3 of the Issuer’s Current Report on Form 8-K filed with the Securities and Exchange Commission on March 6, 2024). |

SIGNATURE

After reasonable inquiry and to the best of each of the undersigned's knowledge and belief, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

Date: March 8, 2024

LANTHEUS HOLDINGS, INC.

By: /s/ Daniel Niedzwiecki
Name: Daniel Niedzwiecki
Title: Chief Administrative Officer and General Counsel

LANTHEUS ALPHA THERAPY, LLC

By: /s/ Daniel Niedzwiecki
Name: Daniel Niedzwiecki
Title: Chief Administrative Officer and General Counsel

SCHEDULE A**DIRECTORS AND EXECUTIVE OFFICERS OF THE REPORTING PERSON**

The name, present principal occupation or employment and citizenship of each director and executive officer of Lantheus Holdings, Inc. are set forth below. The business address for each director and executive officer is c/o Lantheus Holdings, Inc., 201 Burlington Road, South Building, Bedford, MA 01730.

Board of Directors of Lantheus Holdings, Inc.

<u>Name</u>	<u>Present Principal Occupation or Employment</u>	<u>Citizenship</u>
Brian Markison	Chief Executive Officer of Lantheus Holdings, Inc.	United States
Mary Anne Heino (Non-Executive Chair of the Board of Directors)	Former Chief Executive Officer of Lantheus Holdings, Inc.	United States
Minnie Baylor-Henry	President of B-Henry & Associates	United States
Samuel Leno	Former Executive Vice President and Chief Operations Officer, Boston Scientific	United States
Julie McHugh	Former Chief Operating Officer, Endo Health Solutions, Inc.	United States
Gary J. Pruden	Former Executive Vice President, Worldwide Chairman, Medical Devices, Johnson and Johnson	United States
Dr. Gérard Ber	Co-Founder and former Chief Operating Officer of Advanced Accelerator Applications S.A.	France
Heinz Mäusli	Former Chief Financial Officer of Advanced Accelerator Applications S.A.	Switzerland
Dr. James H. Thrall	Distinguished Juan M. Taveras Professorship of Radiology, Harvard Medical School	United States

Executive Officers of Lantheus Holdings, Inc.

<u>Name</u>	<u>Present Principal Occupation or Employment</u>	<u>Citizenship</u>
Brian Markison	Chief Executive Officer	United States
Robert J. Marshall, Jr.	Chief Financial Officer and Treasurer	United States
Paul M. Blanchfield	President	United States
Dr. Jean-Claude Provost	Chief Medical Officer	France
Daniel M. Niedzwiecki	Chief Administrative Officer, General Counsel and Corporate Secretary	United States
Etienne Montagut	Chief Business Officer	France

The name, present principal occupation or employment and citizenship of each executive officer of Lantheus Alpha Therapy, LLC are set forth below. The business address for each executive officer is c/o Lantheus Alpha Therapy, LLC, 201 Burlington Road, South Building, Bedford, MA 01730.

Executive Officers of Lantheus Alpha Therapy, LLC

<u>Name</u>	<u>Present Principal Occupation or Employment</u>	<u>Citizenship</u>
Brian Markison	Chief Executive Officer	United States
Robert J. Marshall, Jr.	Chief Financial Officer and Treasurer	United States
Paul M. Blanchfield	President	United States
Etienne Montagut	Chief Business Officer	France
Daniel M. Niedzwiecki	Chief Administrative Officer, General Counsel and Corporate Secretary	United States
Dr. Jean-Claude Provost	Chief Medical Officer	France