



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

Mail Stop 4546

December 21, 2016

Mary Anne Heino
President and Chief Executive Officer
Lantheus Holdings, Inc.
331 Treble Cove Road
North Billerica, Massachusetts 01862

**Re: Lantheus Holdings, Inc.
Registration Statement on Form S-3
Filed December 12, 2016
File No. 333-215055**

Dear Ms. Heino:

We have limited our review of your registration statement to those issues we have addressed in our comment.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to this comment, we may have additional comments.

General

1. We note that you have a pending request for confidential treatment. Please be advised that we will not be in a position to declare your registration statement effective until we resolve any issues concerning the confidential treatment request.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Refer to Rules 460 and 461 regarding requests for acceleration. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Mary Anne Heino
Lantheus Holdings, Inc.
December 21, 2016
Page 2

Please contact Jeffrey Gabor at (202) 551-2544 or Joseph McCann at (202) 551-6262 with any questions.

Sincerely,

/s/ Joseph McCann for

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Craig E. Marcus, Esq.
Ropes & Gray LLP