



DIVISION OF
CORPORATION FINANCE

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

July 22, 2014

Via E-mail

Michael P. Duffy
Vice President, General Counsel and Secretary
331 Treble Cove Road, Building 600-2
North Billerica, Massachusetts 01862

**Re: Lantheus Holdings, Inc.
Amendment No. 2 to Registration Statement on Form S-1
Filed July 17, 2014
File No. 333-196998**

Dear Mr. Duffy:

We have reviewed your amended registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply 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 these comments, we may have additional comments.

Prospectus Summary, page 1

Recent Developments, page 7

1. Your disclosure of Adjusted EBITDA appears to give greater prominence to this non-GAAP measure. We believe you should balance this disclosure with the comparable financial measure under GAAP. Please revise your disclosure to include preliminary estimated net income or loss for the quarter and any other preliminary financial results that are available.

Summary Consolidated Financial and Other Data, page 14

2. Footnote 1 discloses that your corporate reorganization had no impact on your historical net income (loss). However, it appears that the corporate reorganization resulted in the retrospective revision of the historical weighted average common shares outstanding and the related net loss per share for each period presented. Also it appears that the number

of shares and per share prices in certain sections of the filing has been adjusted to reflect the corporate reorganization. Please provide us with your analysis of the impact the corporate reorganization will have on the historical financial information, historical financial statements and the audit report of Deloitte & Touche LLP.

3. Please revise footnote 4 to quantify the amount of each pro forma adjustment to explain why pro forma as adjusted cash and cash equivalents will decrease by \$4.8 million and stockholders' equity will increase by \$103.2 million. Provide similar disclosure in the pro forma as adjusted capitalization table.

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Our Products
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4. Please amend your registration statement to disclose more information regarding the large prospective study to which you refer. Specifically, please disclose who sponsored and conducted the study, the patient population, the criteria used for determining the statistical results and whether you plan to submit the results of this study to the FDA or other regulatory authority.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation

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of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Donald Abbott at (202) 551-3608 or Andrew Mew at (202) 551-3377 if you have questions regarding comments on the financial statements and related matters. Please contact Christina De Rosa at (202) 551-3577, John Krug at (202) 551-3862 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
Heather Emmel
Weil, Gotshal & Manges LLP
767 Fifth Avenue
New York, NY 10153