



DIVISION OF
CORPORATION FINANCE

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

January 20, 2012

Via E-mail

Robert J. Mulroy
President and Chief Executive Officer
Merrimack Pharmaceuticals, Inc.
One Kendall Square, Suite B7201
Cambridge, MA 02139

**Re: Merrimack Pharmaceuticals, Inc.
Amendment No. 4 to Registration Statement on Form S-1
Filed January 13, 2012
File No. 333-175427**

Dear Mr. Mulroy:

We have reviewed your amended registration statement filed January 13, 2012, and have the following 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 our comment, we may have additional comments.

Management's discussion and analysis of financial condition and results of operations
Critical accounting policies and significant judgments and estimates
Stock Based Compensation, page 69

1. Please refer to your response to our comment one. Please update the table on page 71 to reflect options granted through the date of effectiveness of the filing, or clarify if true, that no additional options were granted. In addition, disclose if any other equity instruments have been issued such as warrants, shares or preferred stock since the date of the financial statements and the terms of those issuances. In this regard, please update the Subsequent Events note in Note 20 on page F-38.

Robert J. Mulroy
Merrimack Pharmaceuticals, Inc.
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You may contact Tabatha Akins, Staff Accountant, at (202) 551-3658 or Lisa Vanjoske, Accounting Reviewer, at (202) 551-3614 if you have questions regarding comments on the financial statements and related matters. Please contact Karen Ubell, Staff Attorney, at (202) 551-3873, Dan Greenspan, Branch Chief, at (202) 551-3623 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Daniel S. Greenspan for

Jeffrey Riedler
Assistant Director