

January 13, 2012

VIA EDGAR SUBMISSION

Securities and Exchange Commission
 Division of Corporation Finance
 100 F Street, NE
 Washington, DC 20549

Attention: Karen Ubell, Esq.

Re: Merrimack Pharmaceuticals, Inc.
 Registration Statement on Form S-1
 File Number 333-175427

Ladies and Gentlemen:

On behalf of Merrimack Pharmaceuticals, Inc. (the “Company”), submitted herewith for filing is Amendment No. 4 (“Amendment No. 4”) to the Registration Statement referenced above (the “Registration Statement”).

Amendment No. 4 is being filed in response to comments contained in the letter dated October 31, 2011 from Jeffrey Riedler of the Staff (the “Staff”) of the Securities and Exchange Commission to Robert J. Mulroy, the Company’s President and Chief Executive Officer. The responses set forth below are based upon information provided to Wilmer Cutler Pickering Hale and Dorr LLP by the Company. The responses are keyed to the numbering of the comments and the headings used in the Staff’s letter. Where appropriate, the Company has responded to the Staff’s comments by making changes to the disclosure in the Registration Statement as set forth in Amendment No. 4.

On behalf of the Company, we advise you as follows:

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 seven in our letter dated August 3, 2011. Please note we may have additional comments once the IPO price is known.*

Response: The Company acknowledges the Staff’s comment. In response to the Staff’s comment, the Company has revised the disclosure on pages 71 and 81 of Amendment No. 4 to reflect stock options granted on November 2, 2011 and to include a discussion of the determination by the board of directors of the fair value of the Company’s common stock as of such

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date. In addition, in further response to the Staff’s comment, the Company has revised the disclosure on pages 81 and 82 of Amendment No. 4 to list significant factors contributing to the difference between the most recent fair value determination of the common stock as of November 2, 2011 and the midpoint of the estimated price range for this offering.

Board Composition and Election of Directors, page 166

2. *Please revise your disclosure to identify the party or parties with whom you have an agreement to include in the proxy a proposal to declassify your board of directors. Further, please expand your disclosure to include the nature of this agreement, why you have agreed to it, whether such agreement is binding, and any other terms to which the company has agreed.*

Response: The Company supplementally advises the Staff that, in December 2011, the Company’s stockholders approved and adopted an amendment and restatement of the Company’s Restated Certificate of Incorporation, to be effective immediately following the closing of this offering (the “Post-Offering Certificate of Incorporation”), which has been filed as an exhibit to the Registration Statement, that no longer includes provisions establishing a classified board of directors or limiting the manner in which stockholders can remove directors from the board. Accordingly, the Company has revised the disclosure on pages 44, 169 and 214 of Amendment No. 4 to remove the disclosures with respect to a classified board of directors and any related references to the agreement to include in the proxy statement for the Company’s first annual meeting of stockholders following the completion of this offering a proposal to declassify the board of directors. The Company further supplementally advises the Staff that its prior agreement, which has no continuing force or effect, to include in the proxy statement for its first annual meeting of stockholders following the completion of this offering a proposal to declassify the board of directors was entered into with a significant stockholder of the Company at the request of the stockholder (given its reservations with respect to the implementation of a classified board) in connection with such stockholder’s approval of various matters in connection with this offering.

If you have any further questions or comments, or if you require any additional information, please contact the undersigned by telephone at (212) 937-7206 or facsimile at (212) 230-8888. Thank you for your assistance.

Very truly yours,

/s/ Brian A. Johnson

Brian A. Johnson
