

January 25, 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"), we are supplementally responding to the comment contained in the letter dated January 20, 2012 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, with respect to Amendment No. 4 to the Registration Statement referenced above, filed on January 13, 2012. The response set forth below is based upon information provided to Wilmer Cutler Pickering Hale and Dorr LLP by the Company.

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 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.*

**Response:** The Company supplementally advises the Staff that the Company has not granted any additional stock options since November 2, 2011. The Company further supplementally advises the Staff that the Company has not issued any equity instruments, such as warrants or shares of common stock or preferred stock, since the date of the Company's financial

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statements, other than as disclosed in Note 20 on page F-38 of Amendment No. 4 and issuances of common stock pursuant to ordinary course exercises of previously outstanding stock options in amounts that are not material to the Company's financial statements. Accordingly, the Company does not believe that any updated disclosure is appropriate or required.

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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