



DIVISION OF  
CORPORATION FINANCE

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

November 27, 2017

Michael P. Mason  
Vice President of Finance and Treasurer  
Alnylam Pharmaceuticals, Inc.  
300 Third Street  
Cambridge, MA 02142

**Re: ALNYLAM PHARMACEUTICALS, INC.**  
**Form 10-K for the Fiscal Year Ended December 31, 2016**  
**Filed February 15, 2017**  
**File No. 001-36407**

Dear Mr. Mason:

We have limited our review of your filing to the financial statements and related disclosures and have the following comment. In our comment, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to the comment within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comment applies to your facts and circumstances, please tell us why in your response.

After reviewing your response to the comment, we may have additional comments.

Form 10-K for the Year Ended December 31, 2016

Notes to Consolidated Financial Statements

3. Significant Agreements , page 97

1. For each significant agreement, please provide us a schedule by type and amount of costs incurred included in research and development expenses for the years ended December 31, 2015 and 2016 and for the nine months ended September 30, 2017. Also provide us a similar schedule for general and administrative expenses or confirm that you have not incurred material general and administrative expenses related to your significant agreements.

In closing, 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

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absence of action by the staff.

You may contact Frank Wyman at 202-551-3660 or Jim Rosenberg at 202-551-3679 with any questions.

Division of Corporation Finance  
Office of Healthcare & Insurance