



DIVISION OF
CORPORATION FINANCE

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

January 23, 2018

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 completed our review of your filing. 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 absence by the staff.

Division of Corporation Finance
Office of Healthcare & Insurance