

ALNYLAM PHARMACEUTICALS, INC.  
 Form S-8  
 March 02, 2009

As filed with the Securities and Exchange Commission on March 2, 2009

Registration No. 333-\_\_\_\_\_

**UNITED STATES  
 SECURITIES AND EXCHANGE COMMISSION  
 Washington, D.C. 20549  
 FORM S-8  
 REGISTRATION STATEMENT UNDER  
 THE SECURITIES ACT OF 1933  
 Alnylam Pharmaceuticals, Inc.  
 (Exact Name of Registrant as Specified in Its Charter)**

**Delaware**  
 (State or Other Jurisdiction of  
 Incorporation or Organization)

**77-0602661**  
 (I.R.S. Employer  
 Identification No.)

**300 Third Street**  
**Cambridge, Massachusetts**  
 (Address of Principal Executive Offices)

**02142**  
 (Zip Code)

**2004 Stock Incentive Plan**  
 (Full Title of the Plan)  
**John M. Maraganore, Ph.D.**  
**Chief Executive Officer**  
**Alnylam Pharmaceuticals, Inc.**  
**300 Third Street**  
**Cambridge, Massachusetts 02142**  
 (Name and Address of Agent For Service)

**(617) 551-8200**

(Telephone Number, Including Area Code, of Agent For Service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller Reporting Company   
 (Do not check if a smaller reporting company)

**CALCULATION OF REGISTRATION FEE**

Title of Securities to be	Amount to be	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price (3)	Amount of Registration Fee
Registered Common Stock (including associated Series A Junior Participating Preferred	Registered (1) 4,109,339 shares (2)	(3) \$ 19.015	Price (3) \$78,139,081.09	\$3,070.87

Stock Rights), \$0.01 par  
value per share

- (1) In accordance with Rule 416 under the Securities Act of 1933, as amended (the Securities Act ), this registration statement shall be deemed to cover any additional securities that may from time to time be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.
- (2) Consists of an additional 4,109,339 shares issuable under the 2004 Stock Incentive Plan, as amended, pursuant to the terms of such plan.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(h) of the Securities Act and based upon the average of the

high and low  
prices of the  
Registrant's  
Common Stock  
as reported on  
the NASDAQ  
Global Market  
on February 27,  
2009.

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**STATEMENT OF INCORPORATION BY REFERENCE**

This Registration Statement on Form S-8 incorporates by reference the contents of the Registration Statements on Form S-8, File No. 333-148114, filed by the Registrant on December 17, 2007, File No. 333-127450, filed by the Registrant on August 11, 2005 and File No. 333-116151, filed by the Registrant on June 3, 2004, relating to the Registrant's 2004 Stock Incentive Plan, as amended.

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**SIGNATURES**

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts on this 2<sup>nd</sup> day of March, 2009.

ALNYLAM PHARMACEUTICALS, INC.

By: /s/ John M. Maraganore, Ph.D.  
John M. Maraganore, Ph.D.  
Chief Executive Officer

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**POWER OF ATTORNEY AND SIGNATURES**

We, the undersigned officers and directors of Alnylam Pharmaceuticals, Inc., hereby severally constitute and appoint John M. Maraganore and Patricia L. Allen, and each of them singly, our true and lawful attorneys with full power to them, and each of them singly, to sign for us and in our names in the capacities indicated below, the registration statement on Form S-8 filed herewith and any and all subsequent amendments to said registration statement, and generally to do all such things in our names and on our behalf in our capacities as officers and directors to enable Alnylam Pharmaceuticals, Inc. to comply with the provisions of the Securities Act, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys, or any of them, to said registration statement and any and all amendments thereto.

Pursuant to the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<b>Signature</b>	<b>Title</b>	<b>Date</b>
/s/ John M. Maraganore, Ph.D. John M. Maraganore, Ph.D.	Chief Executive Officer (Principal Executive Officer)	March 2, 2009
/s/ Patricia L. Allen Patricia L. Allen	Vice President of Finance and Treasurer (Principal Financial and Accounting Officer)	March 2, 2009
/s/ John K. Clarke John K. Clarke	Director	March 2, 2009
/s/ Victor J. Dzau, M.D. Victor J. Dzau, M.D.	Director	March 2, 2009
/s/ Vicki L. Sato, Ph.D. Vicki L. Sato, Ph.D.	Director	March 2, 2009
/s/ Paul R. Schimmel, Ph.D. Paul R. Schimmel, Ph.D.	Director	March 2, 2009
/s/ Edward M. Scolnick, M.D. Edward Scolnick, M.D.	Director	March 2, 2009
/s/ Phillip A. Sharp, Ph.D. Phillip A. Sharp, Ph.D.	Director	March 2, 2009
/s/ Kevin P. Starr Kevin P. Starr	Director	March 2, 2009

/s/ James L. Vincent

Director

March 2, 2009

James L. Vincent

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**INDEX TO EXHIBITS**

Number	Description
4.1	Restated Certificate of Incorporation of the Registrant (filed as Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q on August 11, 2005 (File No. 000-50743) and incorporated herein by reference)
4.2	Amended and Restated By-Laws of the Registrant (filed as Exhibit 3.4 to the Registrant's Registration Statement on Form S-1/A, as amended, on April 6, 2004 (File No. 333-113162) and incorporated herein by reference)
4.3	Rights Agreement dated July 13, 2005 between the Registrant and EquiServe Trust Company, N.A., as Rights Agent (filed as Exhibit 4.1 to the Registrant's Current Report of Form 8-K on July 14, 2005 (File No. 000-50743) and incorporated herein by reference)
5.1	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP, counsel to the Registrant
23.1	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)
23.2	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm
23.3	Consent of Ernst & Young LLP, Independent Auditors of Regulus Therapeutics LLC
24	Power of Attorney (included on the signature page of this registration statement)