

ALNYLAM PHARMACEUTICALS, INC.

Form 4

December 11, 2008

**FORM 4****UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

OMB APPROVAL

OMB Number: 3235-0287  
 Expires: January 31, 2005  
 Estimated average burden hours per response... 0.5

Check this box  
 if no longer  
 subject to  
 Section 16.  
 Form 4 or  
 Form 5  
 obligations  
 may continue.  
*See Instruction*  
 1(b).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF  
SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
 Section 17(a) of the Public Utility Holding Company Act of 1935 or Section  
 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
 Greene Barry E

2. Issuer Name **and** Ticker or Trading  
 Symbol  
 ALNYLAM  
 PHARMACEUTICALS, INC.  
 [ALNY]

5. Relationship of Reporting Person(s) to  
 Issuer

(Check all applicable)

\_\_\_\_ Director \_\_\_\_ 10% Owner  
☒ Officer (give title below) \_\_\_\_ Other (specify below)

President and COO

(Last) (First) (Middle)  
 300 THIRD STREET  
 (Street)

3. Date of Earliest Transaction  
 (Month/Day/Year)  
 12/09/2008

4. If Amendment, Date Original  
 Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check  
 Applicable Line)  
☒ Form filed by One Reporting Person  
 \_\_\_\_ Form filed by More than One Reporting  
 Person

CAMBRIDGE, MA 02142

(City) (State) (Zip)

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
				(A) or (D)			
				Code V Amount (D) Price			

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474  
 (9-02)

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned  
(e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative	2. Conversion	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if	4. Transaction	5. Number of Derivative	6. Date Exercisable and Expiration Date	7. Title and Amount of Underlying Securities	8.
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Security (Instr. 3)	or Exercise Price of Derivative Security	any (Month/Day/Year)	Code (Instr. 8)	Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	(Month/Day/Year)		(Instr. 3 and 4)		S (	
			Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares
Stock Option (right to buy)	\$ 21.35	12/09/2008	A		90,000		<u>(1)</u>	12/08/2018	Common Stock	90,000

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Greene Barry E 300 THIRD STREET CAMBRIDGE, MA 02142			President and COO	

## Signatures

By: /s/ Patricia L. Allen, Attorney-in-Fact For: Barry E. Greene 12/11/2008

\_\_Signature of Reporting Person

Date

## Explanation of Responses:

\* If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) The stock option vests as to 25% of the shares on the 1st anniversary of the date of the stock option grant and as to an additional 6.25% of the shares each successive three month period thereafter.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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