ALNYLAM PHARMACEUTICALS, INC.

Form 4

December 11, 2008

UNITED STATES SECURITIES AND EXCHANGE COMMISSION **OMB** 3235-0287 Washington, D.C. 20549 Number: Check this box January 31, Expires: if no longer 2005 STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF subject to Estimated average **SECURITIES** Section 16. burden hours per Form 4 or response... 0.5 Form 5 Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, obligations Section 17(a) of the Public Utility Holding Company Act of 1935 or Section may continue. 30(h) of the Investment Company Act of 1940 See Instruction 1(b). (Print or Type Responses) 1. Name and Address of Reporting Person * 5. Relationship of Reporting Person(s) to 2. Issuer Name and Ticker or Trading Allen Patricia L Issuer Symbol **ALNYLAM** (Check all applicable) PHARMACEUTICALS, INC. [ALNY] Director 10% Owner X_ Officer (give title Other (specify (Last) (First) (Middle) 3. Date of Earliest Transaction below) (Month/Day/Year) VP of Finance/Treasurer 300 THIRD STREET 12/09/2008 (Street) 4. If Amendment, Date Original 6. Individual or Joint/Group Filing(Check Filed(Month/Day/Year) Applicable Line) _X_ Form filed by One Reporting Person Form filed by More than One Reporting CAMBRIDGE, MA 02142 Person (State) (City) (Zip) Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned 1.Title of 2. Transaction Date 2A. Deemed 4. Securities 5. Amount of 6. Ownership 7. Nature of Security (Month/Day/Year) Execution Date, if TransactionAcquired (A) or Securities Form: Direct Indirect Beneficially Beneficial (Instr. 3) Code Disposed of (D) (D) or (Instr. 8) (Instr. 3, 4 and 5) Owned Indirect (I) Ownership (Month/Day/Year) Following (Instr. 4) (Instr. 4) Reported (A) Transaction(s) or (Instr. 3 and 4) Code V Amount (D) Price Common I 556 Managed Stock Account (1)

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

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

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1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transactic Code (Instr. 8)	5. Number of orDerivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Underlying Securities (Instr. 3 and 4)		8 1 5 (
				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	31,663	(2)	12/08/2018	Common Stock	31,663	

Reporting Owners

Reporting Owner Name / Address	Relationships						
r	Director	10% Owner	Officer	Other			
Allen Patricia L 300 THIRD STREET CAMBRIDGE, MA 02142			VP of Finance/Treasurer				

Signatures

/s/ Patricia L.
Allen

**Signature of Pate Reporting Person

12/11/2008

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 reporting person owns 556 shares of ALNY common stock under the ALNY 401(k) plan as a result of the ALNY 401(k) matching contribution program.
- (2) 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. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.

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