

ALNYLAM PHARMACEUTICALS, INC.

Form 4

August 15, 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

(Last) (First) (Middle)

300 THIRD STREET

(Street)

CAMBRIDGE, MA 02142

(City) (State) (Zip)

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

3. Date of Earliest Transaction (Month/Day/Year)
08/13/2008

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

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

___ Director ___ 10% Owner
 Officer (give title below) ___ Other (specify below)
President and COO

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

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 Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|--|
| | | | Code | V Amount (A) or (D) Price | | | |
| Common Stock | 08/13/2008 | | S ⁽¹⁾ | 4,551 D \$ 33.915 | 0 | D | |
| Common Stock | 08/13/2008 | | M ⁽²⁾ | 30,889 A \$ 0.95 | 30,889 | D | |
| Common Stock | 08/13/2008 | | S ⁽¹⁾ | 30,889 D \$ 33.9402 | 0 | D | |
| Common Stock | | | | | 717 | I | by Managed Account ⁽³⁾ |

Edgar Filing: ALNYLAM PHARMACEUTICALS, INC. - Form 4

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

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

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 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. Transaction Code (Instr. 8) | 5. Number of Derivative 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) | Amount or Number of Shares | |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|----------------------------|--------|
| | | | | Code | V (A) (D) | Date Exercisable | Expiration Date | Title | |
| Incentive Stock Option (right to buy) | \$ 0.95 | 08/13/2008 | | M ⁽²⁾ | 30,889 | 11/06/2004 | 11/06/2013 | Common Stock | 30,889 |

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 08/15/2008

__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 sales reported on this Form 4 were made pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on June 23, 2008.
- (2) This exercise is pursuant to a 10b5-1 plan put in place by the reporting person.
- (3) The reporting person owns 717 shares of ALNY common stock under the ALNY 401(k) plan as a result of the ALNY 401(k) matching contribution program.

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

Edgar Filing: ALNYLAM PHARMACEUTICALS, INC. - Form 4

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.