

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 *
MARAGANORE JOHN

(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)
CEO

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 Beneficial Ownership (Instr. 4)
			Code	V	Amount	Price	
Common Stock	08/13/2008		M ⁽¹⁾		37,500	\$ 0.475	37,500 D
Common Stock	08/13/2008		S ⁽²⁾		37,500	\$ 33.9468	0 D
Common Stock	08/14/2008		M ⁽¹⁾		37,500	\$ 0.475	37,500 D
Common Stock	08/14/2008		S ⁽²⁾		37,500	\$ 34.227	0 D
Common Stock							845 I by Managed

Account
(3)

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)		
				Code	V (A) (D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares
Incentive Stock Option (right to buy)	\$ 0.475	08/13/2008		M ⁽¹⁾	37,500	12/09/2003 02/26/2013	Common Stock	37,500	
Incentive Stock Option (right to buy)	\$ 0.475	08/14/2008		M ⁽¹⁾	37,500	12/09/2003 02/26/2013	Common Stock	37,500	

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
MARAGANORE JOHN 300 THIRD STREET CAMBRIDGE, MA 02142	X		CEO	

Signatures

By: /s/ Patricia L. Allen, Attorney-in-Fact For: John M. Maraganore

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) This exercise is pursuant to a 10b5-1 plan put in place by the reporting person.
- (2) 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.
- (3) The reporting person owns 845 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.

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.