Vaishnaw Akshay Form 3 March 13, 2009

FORM 3

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

OMB APPROVAL

OMB Number:

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INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF Expires:

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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 2. Date of Event Requiring 3. Issuer Name and Ticker or Trading Symbol Person * Statement ALNYLAM PHARMACEUTICALS, INC. [ALNY] Vaishnaw Akshay (Month/Day/Year) 03/04/2009 (Last) (First) (Middle) 4. Relationship of Reporting 5. If Amendment, Date Original Person(s) to Issuer Filed(Month/Day/Year) 300 THIRD STREET (Check all applicable) (Street) 6. Individual or Joint/Group Filing(Check Applicable Line) 10% Owner Director _X_ Form filed by One Reporting _X__ Officer Other Person CAMBRIDGE, MAÂ 02142 (give title below) (specify below) Form filed by More than One SVP, Clinical Research Reporting Person (City) (State) (Zip) Table I - Non-Derivative Securities Beneficially Owned 2. Amount of Securities 4. Nature of Indirect Beneficial 1. Title of Security Beneficially Owned Ownership (Instr. 4) Ownership (Instr. 4) Form: (Instr. 5) Direct (D) or Indirect (I) (Instr. 5) Ι Common Stock 799 by Managed Account (1)

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

SEC 1473 (7-02)

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

1. Title of Derivative Security (Instr. 4)	· · · · · · · · · · · · · · · · · · ·		3. Title and Amount of Securities Underlying Derivative Security		4. Conversion or Exercise	5. Ownership Form of	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	(Instr. 4) Title	Amount or Number of	Price of Derivative Security	Derivative Security: Direct (D) or Indirect	

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				Shares		(I) (Instr. 5)	
Stock Option (right to buy)	(2)	01/02/2016	Common Stock	40,625	\$ 12.96	D	Â
Stock Option (right to buy)	(2)	12/08/2018	Common Stock	60,350	\$ 21.35	D	Â
Stock Option (right to buy)	(2)	12/13/2016	Common Stock	30,000	\$ 22.75	D	Â
Stock Option (right to buy)	(2)	12/11/2017	Common Stock	32,750	\$ 31.39	D	Â

Reporting Owners

Reporting Owner Name / Address	Relationships					
	Director 10% Owner		Officer	Other		
Vaishnaw Akshay 300 THIRD STREET CAMBRIDGE. MA 02142	Â	Â	SVP, Clinical Research	Â		

Signatures

By: /s/ Patricia L. Allen, Attorney-in-Fact For: Akshay Vaishnaw

**Signature of Reporting Person Date

Explanation of Responses:

- * If the form is filed by more than one reporting person, *see* Instruction 5(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 799 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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