

Fanucci Marsha  
Form 3  
December 10, 2010

# FORM 3 UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

OMB APPROVAL

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## INITIAL STATEMENT OF 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 *			2. Date of Event Requiring Statement	3. Issuer Name <b>and</b> Ticker or Trading Symbol	
Â Fanucci Marsha			(Month/Day/Year)	ALNYLAM PHARMACEUTICALS, INC. [ALNY]	
(Last)	(First)	(Middle)	12/08/2010	4. Relationship of Reporting Person(s) to Issuer	5. If Amendment, Date Original Filed(Month/Day/Year)
300 THIRD STREET				(Check all applicable)	
(Street)				<input checked="" type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input type="checkbox"/> Officer <input type="checkbox"/> Other (give title below)    (specify below)	6. Individual or Joint/Group Filing(Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person
CAMBRIDGE,Â MAÂ 02142					
(City)	(State)	(Zip)			

### Table I - Non-Derivative Securities Beneficially Owned

1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
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Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

SEC 1473 (7-02)

**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.**

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

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)	3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)	4. Conversion or Exercise Price of Derivative Security	5. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable    Expiration Date	Title    Amount or Number of Shares			

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Fanucci Marsha 300 THIRD STREET CAMBRIDGE, MA 02142	X			

## Signatures

By: /s/ Patricia L. Allen, Attorney-in-Fact For: Marsha H. Fanucci

12/10/2010

\_\_\_\_Signature of Reporting Person

Date

## Explanation of Responses:

### No securities are beneficially owned

\* 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).

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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