

Ausiello Dennis A
 Form 3
 April 26, 2012

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 and Ticker or Trading Symbol | |
| Â Ausiello Dennis A | | (Month/Day/Year) | ALNYLAM PHARMACEUTICALS, INC. [ALNY] | |
| (Last) | (First) | (Middle) | 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) | |
| CAMBRIDGE,Â MAÂ 02142 | | | 6. Individual or Joint/Group Filing(Check Applicable Line) | |
| (City) | (State) | (Zip) | <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person | |

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) |
|---------------------------------|---|--|---|
| Common Stock | 13,165 | D | Â |
| Common Stock | 3,500 | I | by Trust ⁽¹⁾ |

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 | 5. Ownership Form of Derivative Security: | 6. Nature of Indirect Beneficial Ownership (Instr. 5) |
|--|--|---|---|---|---|
|--|--|---|---|---|---|

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| Date Exercisable | Expiration Date | Title | Amount or Number of Shares | Security | Direct (D) or Indirect (I) (Instr. 5) |
|------------------|-----------------|-------|----------------------------|----------|---------------------------------------|
|------------------|-----------------|-------|----------------------------|----------|---------------------------------------|

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|---------|-------|
| | Director | 10% Owner | Officer | Other |
| Ausiello Dennis A 300 THIRD STREET CAMBRIDGE, MA 02142 | X | | | |

Signatures

By: /s/ Michael P. Mason, Attorney-in-Fact For: Dennis A. Ausiello

04/26/2012

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 shares of ALNY common stock are held in a trust, of which the reporting person's spouse is the trustee.

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.