ALNYLAM PHARMACEUTICALS, INC.

Form 4

September 14, 2006

Check this box

if no longer

subject to

Section 16.

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF

SECURITIES

OMB

OMB APPROVAL

Number:

3235-0287

Expires:

January 31, 2005

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Form 4 or Form 5 obligations may continue. See Instruction

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

1(b).

(Print or Type Responses)

1. Name and Address of Reporting Person * SHARP PHILIP A

2. Issuer Name and Ticker or Trading

5. Relationship of Reporting Person(s) to Issuer

Symbol

ALNYLAM

(Check all applicable)

PHARMACEUTICALS, INC.

3. Date of Earliest Transaction

[ALNY]

(Month/Day/Year)

Filed(Month/Day/Year)

09/12/2006

X_ Director 10% Owner Officer (give title

below)

Other (specify

C/O ALNYLAM

(Last)

PHARMACEUTICALS, INC., 300

(Street)

(First)

(Middle)

THIRD STREET

4. If Amendment, Date Original

6. Individual or Joint/Group Filing(Check

Applicable Line)

X Form filed by One Reporting Person Form filed by More than One Reporting

CAMBRIDGE, MA 02142

(City) (State) (Zip)

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1.Title of Security (Instr. 3)

2. Transaction Date 2A. Deemed

(Month/Day/Year) Execution Date, if any

(Month/Day/Year)

3. 4. Securities TransactionAcquired (A) or Code Disposed of (D) (Instr. 8) (Instr. 3, 4 and 5)

5. Amount of Securities Beneficially Owned Following

6. Ownership 7. Nature of Indirect Form: Direct (D) or Indirect Beneficial Ownership (Instr. 4) (Instr. 4)

(A) or

Reported Transaction(s) (Instr. 3 and 4)

Code V Amount (D) Price

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

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

(9-02)

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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. Transactic Code (Instr. 8)	5. Number of orDerivative 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
Stock Option (right to buy)	\$ 14.05	09/12/2006		A	20,000	09/12/2007	09/12/2016	Common Stock	20,000

Reporting Owners

Reporting Owner Name / Address Relationships

Director 10% Owner Officer Other

SHARP PHILIP A
C/O ALNYLAM PHARMACEUTICALS, INC,
300 THIRD STREET
CAMBRIDGE, MA 02142

Signatures

/s/ Patricia L. Allen, Attorney-in-Fact

09/14/2006

**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).

X

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.

Reporting Owners 2