

☐ 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

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL

OMB Number: 3235-0287

Estimated average burden hours per response: 0.5

1. Name and Address of Reporting Person* <u>SHARP PHILLIP A</u>  (Last) (First) (Middle) <u>675 WEST KENDALL STREET</u> <u>HENRI A. TERMEER SQUARE</u>  (Street) <u>CAMBRIDGE</u> <u>MA</u> <u>02142</u>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>ALNYLAM PHARMACEUTICALS, INC.</u> [ <u>ALNY</u> ]  3. Date of Earliest Transaction (Month/Day/Year) <u>08/15/2022</u>  4. If Amendment, Date of Original Filed (Month/Day/Year)	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)  <input checked="" type="checkbox"/> Director 10% Owner  Officer (give title below) Other (specify below)  6. Individual or Joint/Group Filing (Check Applicable Line)  <input checked="" type="checkbox"/> Form filed by One Reporting Person  Form filed by More than One Reporting Person
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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	(A) or (D)	Price			
Common Stock	08/15/2022		M <sup>(1)</sup>		30,000	A	\$30.09	30,000	D	
Common Stock	08/15/2022		M <sup>(1)</sup>		3,670	A	\$63.86	33,670	D	
Common Stock	08/15/2022		S <sup>(1)</sup>		98	D	\$226.16	33,572	D	
Common Stock	08/15/2022		S <sup>(1)</sup>		1,218	D	\$228.33 <sup>(2)</sup>	32,354	D	
Common Stock	08/15/2022		S <sup>(1)</sup>		11,600	D	\$229.93 <sup>(3)</sup>	20,754	D	
Common Stock	08/15/2022		S <sup>(1)</sup>		16,186	D	\$230.71 <sup>(4)</sup>	4,568	D	
Common Stock	08/15/2022		S <sup>(1)</sup>		3,853	D	\$231.65 <sup>(5)</sup>	715	D	
Common Stock	08/15/2022		S <sup>(1)</sup>		715	D	\$232.81 <sup>(6)</sup>	0	D	
Common Stock								266,899	I	by Trust <sup>(7)</sup>

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 Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Stock Option (right to buy)	\$63.86	08/15/2022		M <sup>(1)</sup>			3,670	(8)	01/02/2024	Common Stock	3,670	\$0.0	0	D	
Stock Option (right to buy)	\$30.09	08/15/2022		M <sup>(1)</sup>			30,000	06/06/2014	06/06/2023	Common Stock	30,000	\$0.0	0	D	

Explanation of Responses:

1. The sales reported on this Form 4 were made pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on June 16, 2022.
2. Sale prices ranged from \$228.00 to \$228.80.
3. Sale prices ranged from \$229.29 to \$230.29.
4. Sale prices ranged from \$230.30 to \$231.30.
5. Sale prices ranged from \$231.31 to \$232.26.
6. Sale prices ranged from \$232.53 to \$233.16.
7. Includes shares held by the Phillip A. Sharp Revocable Trust, of which the reporting person and his spouse are co-trustees. Also includes shares held in trust for the benefit of the reporting persons children, of which the reporting persons children and spouse are the trustees.
8. The stock option was fully vested as of 12/31/14.

By: /s/ Mary Beth DeLena,  
Attorney-in-Fact For: Phillip A. Sharp 08/17/2022

\*\* Signature of Reporting Person Date

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

\* 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).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

**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 Number.**