

☐ 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>MARAGANORE JOHN</u> (Last) (First) (Middle) <u>675 WEST KENDALL STREET</u> <u>HENRI A. TERMEER SQUARE</u> (Street) <u>CAMBRIDGE MA 02142</u> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>ALNYLAM PHARMACEUTICALS, INC. [ALNY]</u> 3. Date of Earliest Transaction (Month/Day/Year) <u>02/24/2021</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 <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>Chief Executive Officer</u> 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	02/25/2021		M ⁽¹⁾		33,979	A	\$7.1	240,015	D	
Common Stock	02/25/2021		S ⁽¹⁾		1,001	D	\$143.88 ⁽²⁾	239,014	D	
Common Stock	02/25/2021		S ⁽¹⁾		6,129	D	\$145.15 ⁽³⁾	232,885	D	
Common Stock	02/25/2021		S ⁽¹⁾		9,376	D	\$146.13 ⁽⁴⁾	223,509	D	
Common Stock	02/25/2021		S ⁽¹⁾		6,097	D	\$146.98 ⁽⁵⁾	217,412	D	
Common Stock	02/25/2021		S ⁽¹⁾		4,375	D	\$148 ⁽⁶⁾	213,037	D	
Common Stock	02/25/2021		S ⁽¹⁾		1,364	D	\$148.96 ⁽⁷⁾	211,673	D	
Common Stock	02/25/2021		S ⁽¹⁾		2,054	D	\$150.22 ⁽⁸⁾	209,619	D	
Common Stock	02/25/2021		S ⁽¹⁾		1,415	D	\$151.31 ⁽⁹⁾	208,204	D	
Common Stock	02/25/2021		S ⁽¹⁾		1,138	D	\$152.46 ⁽¹⁰⁾	207,066	D	
Common Stock	02/25/2021		S ⁽¹⁾		431	D	\$153.33 ⁽¹¹⁾	206,635	D	
Common Stock	02/25/2021		S ⁽¹⁾		599	D	\$154.59 ⁽¹²⁾	206,036	D	
Common Stock								3,133	I	by Managed Account ⁽¹³⁾

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)	\$151.59	02/24/2021		A		79,998 ⁽¹⁴⁾		(15)	02/23/2031	Common Stock	79,998	\$0.0	79,998	D	
Stock Option (right to buy)	\$7.1	02/25/2021		M ⁽¹⁾			33,979	(16)	11/30/2021	Common Stock	33,979	\$0.0	101,936	D	

Explanation of Responses:

1. All sales reported on this Form 4 were made pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on September 9, 2020. The 33,979 options exercised and sold by the reporting person were due to expire on November 30, 2021.
2. Sale prices ranged from \$143.50 to \$144.43.
3. Sale prices ranged from \$144.54 to \$145.54.
4. Sale prices ranged from \$145.55 to \$146.55.
5. Sale prices ranged from \$146.59 to \$147.59.
6. Sale prices ranged from \$147.60 to \$148.59.
7. Sale prices ranged from \$148.66 to \$149.65.
8. Sale prices ranged from \$149.73 to \$150.62.
9. Sale prices ranged from \$150.88 to \$151.68.
10. Sale prices ranged from \$151.92 to \$152.76.
11. Sale prices ranged from \$153.05 to \$153.90.
12. Sale prices ranged from \$154.37 to \$154.68.

13. Reflects shares of ALNY common stock acquired by the reporting person under the ALNY 401(k) plan as a result of the ALNY 401(k) matching contribution program.
14. Represents the time-vested stock option portion of the reporting person's Annual Equity Award for 2020. The reporting person also received 42,879 performance stock units that will vest upon the achievement of four specific performance conditions, which will be reported on a Form 4 if and when each performance condition is met and the performance stock units vest.
15. 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.
16. The stock option vested 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.

By: /s/ Mary Beth DeLena,
Attorney-in-Fact For: John M. Maraganore 02/26/2021

** 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.