

☐ 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>Greene Barry E</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>04/07/2020</u> 4. If Amendment, Date of Original Filed (Month/Day/Year)	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <div>Director 10% Owner</div> <div><input checked="" type="checkbox"/> Officer (give title below) Other (specify below)</div> <div><u>President</u></div> 6. Individual or Joint/Group Filing (Check Applicable Line) <div><input checked="" type="checkbox"/> Form filed by One Reporting Person</div> <div>Form filed by More than One Reporting Person</div>
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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	04/07/2020		A ⁽¹⁾		5,417	A	\$0.0	63,899	D	
Common Stock	04/07/2020		F ⁽²⁾		1,599	D	\$104.75	62,300	D	
Common Stock	04/07/2020		F ⁽²⁾		64	D	\$106.65	62,236	D	
Common Stock								3,003	I	by Managed Account ⁽³⁾
Common Stock								3,486	I	by Trust ⁽⁴⁾

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		Date Exercisable	Expiration Date					

Explanation of Responses:

1. On February 28, 2019, the reporting person was granted performance-based restricted stock units (PSU) in connection with the 2018 year-end compensation review. This PSU award vests in three equal installments upon the later of one year from the date of grant and the achievement of each of three specific clinical development, regulatory or commercial events. One third of the shares subject to release under the PSU award vested upon the filing by the Company of its fourth NDA with the FDA, as determined by the compensation committee of the Company effective April 7, 2020.
2. Represents shares automatically sold by the Company on behalf of the reporting person pursuant to a mandatory sell-to-cover provision in the PSU award agreement required to cover minimum statutory tax withholding obligations that became due upon the vesting event.
3. 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.
4. Represents remaining shares held by the "Barry E. Greene Qualified Annuity Interest Trust" (GRAT), of which Barry E. Greene is the sole Trustee

By: /s/ Mary Beth DeLena,
Attorney-in-Fact For: Barrey 04/09/2020
E. Greene

** 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.