

OMB APPROVAL	
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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

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

1. Name and Address of Reporting Person* <u>Poulton Jeffrey V.</u> (Last) (First) (Middle) 675 WEST KENDALL STREET HENRI A. TERMEER SQUARE (Street) CAMBRIDGE MA 02142 (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>ALNYLAM PHARMACEUTICALS, INC. [ALNY]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) EVP, Chief Financial Officer
	3. Date of Earliest Transaction (Month/Day/Year) 02/27/2023	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	

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			

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
Restricted Stock Units	(1)	02/27/2023		A		5,724 ⁽²⁾		(3)	02/27/2026 ⁽³⁾	Common Stock	5,724	\$0.0	5,724	D	
Stock Option (right to buy)	\$190.01	02/27/2023		A		11,850 ⁽⁴⁾		(5)	02/27/2033	Common Stock	11,850	\$0.0	11,850	D	

Explanation of Responses:

- Each restricted stock unit represents a contingent right to receive one share of ALNY common stock.
- Represents the time-vested restricted stock unit portion of the reporting person's annual equity award granted in 2023 for 2022 performance. The reporting person also received 11,447 performance stock units as part of their annual equity award that will vest upon the achievement of three specific performance conditions (subject to a one year minimum vesting period), which will be reported on a Form 4 as to the performance stock units allocated to each performance condition if and when each performance condition is met and the performance stock units vest.
- The restricted stock units vest ratably in three installments, with one third vesting on each of the first, second and third anniversaries of the grant date.
- Represents the time-vested stock option portion of the reporting person's annual equity award granted in 2023 for 2022 performance.
- The stock option vests as to 25% of the shares on the first anniversary of the grant date and as to an additional 6.25% of the shares at the end of each successive three month period thereafter until the fourth anniversary of the grant date.

Remarks:

Exhibit List: Exhibit 24 - Power of Attorney

By: /s/ Andrew Mayer,
Attorney-in-Fact For: Jeffrey V. Poulton 03/01/2023

** 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.

LIMITED POWER OF ATTORNEY
FOR SECTION 16 REPORTING OBLIGATIONS

Know all of these presents, that the undersigned hereby revokes and nullifies any prior power of attorney for Section 16 reporting obligations, and makes, constitutes and appoints each of Jeffrey Poulton, Indrani Franchini, Andrew Mayer, Cindy Anderson and Stephen Hall signing singly and each acting individually, as the undersigned's true and lawful attorney-in-fact with full power and authority as hereinafter described to:

(1) execute for and on behalf of the undersigned, in the undersigned's capacity as an officer and/or director of Alnylam Pharmaceuticals, Inc. (the Company), Forms 3, 4 and 5 (including any amendments thereto) in accordance with Section 16(a) of the Securities and Exchange Act of 1934, as amended, and the rules thereunder (the Exchange Act);

(2) do and perform any and all acts for and on behalf of the undersigned which may be necessary or desirable to prepare, complete and execute any such Form 3, 4, or 5, prepare, complete and execute any amendment or amendments thereto, and timely deliver and file such form with the United States Security and Exchange Commission and any stock exchange or similar authority;

(3) seek or obtain, as the undersigned's representative and on the undersigned's behalf, information regarding transactions in the Company's securities from any third party, including brokers, employee benefit plan administrators and trustees, and the undersigned hereby authorizes any such person to release any such information to such attorney-in-fact and approves and ratifies any such release of information; and

(4) take any other action of any type whatsoever in connection with the foregoing which, in the opinion of such attorney-in-fact, may be of benefit to, in the interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

The undersigned hereby grants to each such attorney-in-fact full power and authority to do and perform any and every act and thing whatsoever requisite, necessary, or proper to be done in the exercise of any of the rights and powers herein granted, as fully to all intents and purposes as to the undersigned might or could do if personally present, with full power of substitution or revocation, hereby ratifying and confirming all that such attorney-in-fact or such attorney-in-fact's substitute or substitutes, shall lawfully do or cause to be done by virtue of this power of attorney and the rights and powers herein granted. The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, are not assuming nor relieving, nor is the Company assuming nor relieving, any of the undersigned's responsibilities to comply with Section 16 of the Exchange Act. The undersigned acknowledges that neither the company nor the foregoing attorneys-in-fact assume (i) any liability of the undersigned's responsibility to comply with the requirements of the Exchange Act, (ii) any liability of the undersigned for any failure to comply with such requirements, or (iii) any obligation or liability of the undersigned for profit disgorgement under Section 16(b) of the Exchange Act.

This Power of Attorney shall remain in full force and effect until the undersigned is no longer required to file Forms 3, 4, and 5 with respect to the undersigned's holdings of and transactions in securities issued by the Company, unless earlier revoked by the undersigned in a signed writing delivered to the foregoing attorneys-in-fact.

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 6th day of December 2022.

Jeff Poulton
Print Name

/s/ Jeff Poulton
Signature