1. Name and Address of Reporting Person
   Tanguler Tolga
   675 WEST KENDALL STREET
   HENRI A. TERMEER SQUARE
   CAMBRIDGE MA 02142

2. Issuer Name and Ticker or Trading Symbol
   ALNYLAM PHARMACEUTICALS, INC. [ALNY]

3. Date of Earliest Transaction (Month/Day/Year)
   03/01/2024

4. If Amendment, Date of Original Filed
   03/01/2024

5. Relationship of Reporting Person(s) to Issuer
   Director
   10% Owner
   Officer (give title below)
   EVP, Chief Commercial Officer

6. Individual or Joint/Group Filing (Check Applicable Line)
   Form filed by One Reporting Person
   Form filed by More than One Reporting Person

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**Rule 10b5-1(c) Transaction Indication**

☐ Check this box to indicate that a transaction was made pursuant to a contract, instruction or written plan that is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c). See Instruction 10.

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

<table>
<thead>
<tr>
<th>1. Title of Security (Instr. 3)</th>
<th>2. Transaction Date (Month/Day/Year)</th>
<th>3A. Deemed Execution Date, if any (Month/Day/Year)</th>
<th>4. Transaction Code (Instr. 8)</th>
<th>5. Number of Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)</th>
<th>6. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)</th>
<th>7. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)</th>
<th>8. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)</th>
<th>9. Nature of Indirect Beneficial Ownership (Instr. 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Stock</td>
<td>03/01/2024</td>
<td>A</td>
<td>A</td>
<td>$0.0</td>
<td>9,987</td>
<td>D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>1. Title of Derivative Security (Instr. 3)</th>
<th>2. Conversion or Exercise Price of Derivative Security</th>
<th>3. Transaction Date (Month/Day/Year)</th>
<th>3A. Deemed Execution Date, if any (Month/Day/Year)</th>
<th>4. Transaction Code (Instr. 8)</th>
<th>5. Number of Derivative Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)</th>
<th>6. Date Exercisable and Expiration Date (Month/Day/Year)</th>
<th>7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)</th>
<th>8. Price of Derivative Security (Instr. 5)</th>
<th>9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)</th>
<th>10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)</th>
<th>11. Nature of Indirect Beneficial Ownership (Instr. 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock Option (right to buy)</td>
<td>$152.61</td>
<td>03/01/2024</td>
<td>A</td>
<td>9,279</td>
<td>(3) 03/01/2024</td>
<td>Common Stock 9,279</td>
<td>$0.0</td>
<td>9,279</td>
<td>D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Explanation of Responses:**

1. These shares are represented by restricted stock units (RSUs) granted under the Amended and Restated 2018 Stock Incentive Plan. Each RSU represents a contingent right to receive one share of common stock. The RSUs will vest over a three-year period, with one third vesting on each of the first, second and third anniversaries of the grant date, subject to the Reporting Persons continuous service with the Issuer as of each such vesting date.

2. The Reporting Person has reported prior awards of RSUs in Table II of Form 4.

3. The stock option vests as to 25% of the shares on the first anniversary of the grant date and the remaining shares vesting in equal installments at the end of each successive three-month period thereafter until the fourth anniversary of the grant date, subject to the Reporting Persons continuous service with the Issuer as of each such vesting date.

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**By:** Stephen Hall, Attorney-in-Fact For: Tolga Tanguler
03/05/2024
**Signature of Reporting Person**

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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).


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.