

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 144

**NOTICE OF PROPOSED SALE OF SECURITIES
PURSUANT TO RULE 144 UNDER THE SECURITIES ACT OF 1933**

ATTENTION: *Transmit for filing 3 copies of this form concurrently with either placing an order with a broker to execute sale or executing a sale directly with a market maker.*

| OMB APPROVAL | |
|--|---------------|
| OMB Number: | 3235-0101 |
| Expires: | June 30, 2020 |
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| SEC USE ONLY |
|-----------------------|
| DOCUMENT SEQUENCE NO. |

CUSIP NUMBER

WORK LOCATION

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|---|---|--|--|---|-----------|---|-----------|----------|---|-----------|----|-------|
| 1(a) NAME OF ISSUER (Please type or print) <div style="text-align: center;">Alnylam Pharmaceuticals, Inc.</div> | | (b) IRS IDENT. NO. <div style="text-align: center;">77-0602661</div> | (c) S.E.C. FILE NO. <div style="text-align: center;">000-50743</div> | (e) TELEPHONE NO. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">AREA CODE</td> <td>NUMBER</td> </tr> </table> | AREA CODE | NUMBER | | | | | | |
| AREA CODE | NUMBER | | | | | | | | | | | |
| 1(d) ADDRESS OF ISSUER <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">STREET</td> <td style="width: 20%;">CITY</td> <td style="width: 20%;">STATE</td> <td style="width: 30%;">ZIP CODE</td> </tr> <tr> <td>300 Third Street, 3rd Floor</td> <td>Cambridge</td> <td>MA</td> <td>02142</td> </tr> </table> | | STREET | CITY | STATE | ZIP CODE | 300 Third Street, 3 rd Floor | Cambridge | MA | 02142 | | | |
| STREET | CITY | STATE | ZIP CODE | | | | | | | | | |
| 300 Third Street, 3 rd Floor | Cambridge | MA | 02142 | | | | | | | | | |
| 2(a) NAME OF PERSON FOR WHOSE ACCOUNT THE SECURITIES ARE TO BE SOLD <div style="text-align: center;">Akshay Vaishnav</div> | (c) RELATIONSHIP TO ISSUER <div style="text-align: center;">Officer</div> | (d) ADDRESS <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">STREET</td> <td style="width: 20%;">CITY</td> <td style="width: 20%;">STATE</td> <td style="width: 30%;">ZIP CODE</td> </tr> <tr> <td>c/o 300 Third Street, 3rd Floor</td> <td>Cambridge</td> <td>MA</td> <td>02142</td> </tr> </table> | | | STREET | CITY | STATE | ZIP CODE | c/o 300 Third Street, 3 rd Floor | Cambridge | MA | 02142 |
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| c/o 300 Third Street, 3 rd Floor | Cambridge | MA | 02142 | | | | | | | | | |

INSTRUCTION: The person filing this notice should contact the issuer to obtain the I.R.S. Identification Number and the S.E.C. File Number.

| 3(a) Title of the Class of Securities To Be Sold | 3(b) Name and Address of Each Broker Through Whom the Securities are to be Offered or Each Market Maker who is Acquiring the Securities | SEC USE ONLY | 3(c) Number of Shares or Other Units To Be Sold (See Instr. 3(c)) | 3(d) Aggregate Market Value (See Instr. 3(d)) | 3(e) Number of Shares or Other Units Outstanding (See Instr. 3(e)) | 3(f) Approximate Date of Sale (See Instr. 3(f)) (MO. DAY YR.) | 3(g) Name of Each Securities Exchange (See Instr. 3(g)) |
|---|--|---------------------------|---|---|--|--|---|
| | | Broker-Dealer File Number | | | | | |
| Common | UBS Financial Services, Inc. 800 Harbor Blvd. 3rd floor Weehawken, NJ 07086 | | 971 | \$135,940 | 115,969,783 | 9-29-2020 | NASDAQ |
| | | | | | | | |

INSTRUCTIONS:

1. (a) Name of issuer
(b) Issuer's I.R.S. Identification
(c) Issuer's S.E.C. file number, if any
(d) Issuer's address, including zip code
(e) Issuer's telephone number, including area code
2. (a) Name of person for whose account the securities are to be sold
(b) Such person's relationship to the Issuer (e.g., officer, director, 10% stockholder, or member of immediate family of any of the foregoing)
(c) Such person's address, including zip code
3. (a) Title of the class of securities to be sold
(b) Name and address of each broker through whom the securities are intended to be sold
(c) Number of shares or other units to be sold (if debt securities, give the aggregate face amount)
(d) Aggregate market value of the securities to be sold as of a specified date within 10 days prior to the filing of this notice
(e) Number of shares or other units of the class outstanding, or if debt securities the face amount thereof outstanding, as shown by the most recent report or statement published by the Issuer
(f) Approximate date on which the securities are to be sold
(g) Name of each securities exchange, if any, on which the securities are intended to be sold

Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

TABLE I — SECURITIES TO BE SOLD

*Furnish the following information with respect to the acquisition of the securities to be sold
and with respect to the payment of all or any part of the purchase price or other consideration therefor:*

| Title of the Class | Date you Acquired | Nature of Acquisition Transaction | Name of Person from Whom Acquired (If gift, also give date donor acquired) | Amount of Securities Acquired | Date of Payment | Nature of Payment |
|--------------------|-------------------|-----------------------------------|---|-------------------------------|------------------|-------------------|
| Common | Date of Exercise | Exercise of Stock Options | ISSUER | 971 | Date of Exercise | CASH |

INSTRUCTIONS: If the securities were purchased and full payment therefor was not made in cash at the time of purchase, explain in the table or in a note thereto the nature of the consideration given. If the consideration consisted of any note or other obligation, or if payment was made in installments describe the arrangement and state when the note or other obligation was discharged in full or the last installment paid.

TABLE II — SECURITIES SOLD DURING THE PAST 3 MONTHS

Furnish the following information as to all securities of the issuer sold during the past 3 months by the person for whose account the securities are to be sold.

| Name and Address of Seller | Title of Securities Sold | Date of Sale | Amount of Securities Sold | Gross Proceeds |
|----------------------------|--------------------------|--------------|---------------------------|----------------|
| N/A | NONE | N/A | N/A | N/A |

REMARKS:

INSTRUCTIONS:

See the definition of “person” in paragraph (a) of Rule 144. Information is to be given not only as to the person for whose account the securities are to be sold but also as to all other persons included in that definition. In addition, information shall be given as to sales by all persons whose sales are required by paragraph (e) of Rule 144 to be aggregated with sales for the account of the person filing this notice.

ATTENTION:

The person for whose account the securities to which this notice relates are to be sold hereby represents by signing this notice that he does not know any material adverse information in regard to the current and prospective operations of the Issuer of the securities to be sold which has not been publicly disclosed. If such person has adopted a written trading plan or given trading instructions to satisfy Rule 10b5-1 under the Exchange Act, by signing the form and indicating the date that the plan was adopted or the instruction given, that person makes such representation as of the plan adoption or instruction date.

9/29/2020

DATE OF NOTICE

12/4/2019

DATE OF PLAN ADOPTION OR GIVING OF INSTRUCTION,
IF RELYING ON RULE 10B5-1

/S/ Akshay Vaishnaw

(SIGNATURE)

The notice shall be signed by the person for whose account the securities are to be sold. At least one copy of the notice shall be manually signed. Any copies not manually signed shall bear typed or printed signatures.

ATTENTION: Intentional misstatements or omission of facts constitute Federal Criminal Violations (See 18 U.S.C. 1001)