FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

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

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Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| Name and Address of Reporting Person Durso-Bumpus Debra | | | | | | Blueprint Medicines Corp [BPMC] | | | | | | | | Relationship neck all appli Direct | cable) or | ig Pers | 10% Ov | vner | | |
|--|---|--|---|--|------------------------------|---|---------|------------------------|--|-----------------|----------------------|--|--|---|---|--------------------------------|--|---|--|--|
| (Last) (First) (Middle) C/O BLUEPRINT MEDICINES CORPORATION | | | | | | 3. Date of Earliest Transaction (Month/Day/Year) 06/28/2024 | | | | | | | | below) | | Other below) PLE OFFICER | | . , | | |
| 45 SIDNEY STREET | | | | | | 4. If Amendment, Date of Original Filed (Month/Day/Year) | | | | | | | | 6. Individual or Joint/Group Filing (Check Applicable Line) | | | | | | |
| (Street) CAMBRIDGE MA 02139 | | | | | | | | | | | | | | | Form filed by One Reporting Person Form filed by More than One Reporting Person | | | | | |
| (City) (State) (Zip) | | | | | Rı | Rule 10b5-1(c) Transaction Indication | | | | | | | | | | | | | | |
| | | | | | | Check satisfy | this bo | ox to inc firmative | licate that e defense | a trar condi | nsaction was i | made pursu 10b5-1(c). S | ant to a cor See Instructi | tract, instruct ion 10. | on or written | plan ti | hat is intende | ed to | | |
| Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned | | | | | | | | | | | | | | | | | | | | |
| 1. Title of Security (Instr. 3) 2. Transactic Date (Month/Day/ | | | | | | Execution Date, | | | | | | ies Acquired (A) or Of (D) (Instr. 3, 4 and 5 | | Benefic | es ially Following | Form (D) o | r Indirect rstr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) | | |
| | | | | | | | | | Code | v | Amount | (A) or (D) | Price | Transaction(s) (Instr. 3 and 4) | | | | (111511. 4) | | |
| Common Stock 06/28/20 | | | | | 2024 | 1 | | M ⁽¹⁾ | | 333 | A | \$54.13 | 3 44 | ,096 | | D | | | | |
| Common Stock 06/28/20 | | | | | 2024 | 24 | | | S ⁽¹⁾ | | 333 | D | \$111.15 | ⁵⁽²⁾ 43 | ,763 | | D | | | |
| | | Т | able II | | | | | | | | posed of converti | | | / Owned | | | | | | |
| 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. Transa Code (8) | | | | 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 derivative Securities Beneficial Owned Following Reported Transactic (Instr. 4) | ily | Ownership Form: Direct (D) or Indirect (I) (Instr. 4 | Beneficial Ownership (Instr. 4) | | |
| | | | | | Code | v | (A) | (D) | Date Exercisa | ble | Expiration Date | Title | Amount or Number of Shares | | | | | | | |
| Stock Option (Right to | \$54.13 | 06/28/2024 | | | M ⁽¹⁾ | | | 333 | (3) | | 03/01/2030 | Common Stock | 333 | \$0 | 12,667 | 7 | D | | | |

Explanation of Responses:

- 1. Effected pursuant to a trading plan adopted on March 13, 2024 pursuant to Rule 10b5-1 under the Securities Exchange Act of 1934, as amended.
- 2. The price reported is a weighted average price. These shares were sold in multiple transactions ranging from \$111.00 to \$111.33 per share. The Reporting Person undertakes to provide to the Issuer, any security holder of the Issuer or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares sold at each separate price within the range set forth in this
- 3. This option was granted on March 1, 2020 and is fully vested as of the transaction date.

/s/ Melissa Masse

07/02/2024

** 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.