

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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

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>Third Rock Ventures II, L.P.</u> (Last) (First) (Middle) <u>C/O THIRD ROCK VENTURES, LLC</u> <u>29 NEWBURY STREET, 3RD FLOOR</u> (Street) <u>BOSTON MA 02116</u> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>Blueprint Medicines Corp [BPMC]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <u>02/27/2017</u>	
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			
Common Stock	02/27/2017		j ⁽¹⁾		1,000,000	D	(1)	3,453,753	D ⁽²⁾	
Common Stock								141,240	D ⁽³⁾	
Common Stock								141,244	D ⁽⁴⁾	
Common Stock								34,750	D ⁽⁵⁾	

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)
						Date Exercisable	Expiration Date					

1. Name and Address of Reporting Person* <u>Third Rock Ventures II, L.P.</u> (Last) (First) (Middle) <u>C/O THIRD ROCK VENTURES, LLC</u> <u>29 NEWBURY STREET, 3RD FLOOR</u> (Street) <u>BOSTON MA 02116</u> (City) (State) (Zip)
1. Name and Address of Reporting Person* <u>Third Rock Ventures GP II, L.P.</u> (Last) (First) (Middle) <u>C/O THIRD ROCK VENTURES, LLC</u> <u>29 NEWBURY STREET, 3RD FLOOR</u> (Street) <u>BOSTON MA 02116</u> (City) (State) (Zip)
1. Name and Address of Reporting Person*

TRV GP II, LLC

(Last) (First) (Middle)

C/O THIRD ROCK VENTURES, LLC
29 NEWBURY STREET, 3RD FLOOR

(Street)
BOSTON MA 02116

(City) (State) (Zip)

1. Name and Address of Reporting Person*

LEVIN MARK J

(Last) (First) (Middle)

C/O THIRD ROCK VENTURES, LLC
29 NEWBURY STREET, 3RD FLOOR

(Street)
BOSTON MA 02116

(City) (State) (Zip)

1. Name and Address of Reporting Person*

STARR KEVIN P

(Last) (First) (Middle)

C/O THIRD ROCK VENTURES, LLC
29 NEWBURY STREET, 3RD FLOOR

(Street)
BOSTON MA 02116

(City) (State) (Zip)

1. Name and Address of Reporting Person*

TEPPER ROBERT I

(Last) (First) (Middle)

C/O THIRD ROCK VENTURES, LLC
29 NEWBURY STREET, 3RD FLOOR

(Street)
BOSTON MA 02116

(City) (State) (Zip)

Explanation of Responses:

1. Pursuant to a Rule 10b5-1 trading plan adopted by Third Rock Ventures II, L.P. ("TRV II"), TRV II distributed on February 27, 2017, for no consideration, 1,000,000 shares of Common Stock of the Issuer (the "Shares") to its limited partners and to Third Rock Ventures GP II, L.P. ("TRV GP II"), the general partner of TRV II, representing each such partner's pro rata interest in such Shares. On the same date, TRV GP II distributed, for no consideration, the Shares it received in the distribution by TRV II to its partners, representing each such partner's pro rata interest in such Shares. All of the aforementioned distributions were made in accordance with the exemptions afforded by Rules 16a-13 and 16a-9 of the Securities Exchange Act of 1934, as amended.

2. These shares are directly held by TRV II. The general partner of TRV II is TRV GP II. The general partner of TRV GP II is TRV GP II, LLC ("TRV GP II LLC"). The individual managers of TRV GP II LLC are Mark Levin ("Levin"), Kevin Starr ("Starr") and Dr. Robert Tepper ("Tepper"). Each of TRV GP II, TRV GP II LLC, Levin, Starr and Tepper disclaims beneficial ownership of the shares except to the extent of its or his pecuniary interest therein, if any, and this report shall not be deemed an admission that it or he is the beneficial owner of such shares.

3. These shares are directly held by Tepper.

4. These shares are directly held by Levin.

5. These shares are directly held by Starr.

Remarks:

/s/ Kevin Gillis, Chief
Financial Officer of TRV GP
II, LLC, general partner of
Third Rock Ventures GP II, 02/28/2017
L.P., general partner of Third
Rock Ventures II, L.P.

/s/ Kevin Gillis, Chief
Financial Officer of TRV GP
II, LLC, general partner of 02/28/2017
Third Rock Ventures GP II,
L.P.

/s/ Kevin Gillis, Chief 02/28/2017
Financial Officer of TRV GP

II, LLC

/s/ Kevin Gillis by power of attorney for Mark Levin 02/28/2017

/s/ Kevin Gillis by power of attorney for Kevin Starr 02/28/2017

/s/ Kevin Gillis by power of attorney for Dr. Robert Tepper 02/28/2017

** 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.