

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
PRE-EFFECTIVE AMENDMENT NO. 1 TO
FORM S-3
REGISTRATION STATEMENT
UNDER THE SECURITIES ACT OF 1933
Blueprint Medicines Corporation
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

001-37359
(I.R.S. Employer
Identification Number)

38 Sidney Street, Suite 200
Cambridge, Massachusetts 02139
(617) 374-7580
(Address, Including Zip Code, and Telephone Number,
Including Area Code, of Registrant's Principal Executive Offices)

Jeffrey W. Albers
President and Chief Executive Officer
Blueprint Medicines Corporation
38 Sidney Street, Suite 200
Cambridge, MA 02139
(617) 374-7580
(Name, Address, Including Zip Code, and Telephone Number,
Including Area Code, of Agent for Service)

Copy to:

Kingsley L. Taft
Danielle M. Lauzon
Goodwin Procter LLP
Exchange Place
53 State Street
Boston, MA 02109
(617) 570-1000

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended (the "Securities Act") other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
(Do not check if a smaller reporting company)

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this Registration Statement shall become effective on such date as the Securities and Exchange Commission acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

Blueprint Medicines Corporation is filing this pre-effective Amendment No. 1 (this “Amendment”) to the Registration Statement on Form S-3 (Registration No. 333-211266) (the “Registration Statement”) as an exhibit-only filing to re-file Exhibit 23.1 previously filed with the Registration Statement. Accordingly, this Amendment consists only of the facing page, this explanatory note, Item 16 of Part II of the Registration Statement, the signature page to the Registration Statement, the exhibit index and the re-filed Exhibit 23.1. The prospectus and the balance of Part II of the Registration Statement are unchanged and have been omitted.

PART II.
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 16. Exhibits.

The exhibits to this Registration Statement are listed in the exhibit index, which appears elsewhere herein and is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this pre-effective Amendment No. 1 to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of City of Cambridge, Commonwealth of Massachusetts, on this 22nd day of July, 2016.

BLUEPRINT MEDICINES CORPORATION

By: /s/ Jeffrey W. Albers

Jeffrey W. Albers

President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this pre-effective Amendment No. 1 to the Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Jeffrey W. Albers</u> Jeffrey W. Albers	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	July 22, 2016
<u>/s/ Michael Landsittel</u> Michael Landsittel	Vice President of Finance <i>(Principal Financial and Accounting Officer)</i>	July 22, 2016
<u>*</u> Daniel S. Lynch	Chairman of the Board	July 22, 2016
<u>*</u> Nicholas Lydon, Ph.D.	Director	July 22, 2016
<u>*</u> Alexis Borisy	Director	July 22, 2016
<u>*</u> Mark Goldberg, M.D.	Director	July 22, 2016
<u>*</u> Charles A. Rowland, Jr.	Director	July 22, 2016
<u>*</u> George Demetri, M.D.	Director	July 22, 2016
<u>*</u> Lonnell Coats	Director	July 22, 2016
<u>*</u> Lynn Seely, M.D.	Director	July 22, 2016
<u>/s/ Michael Landsittel</u> *Michael Landsittel, as Attorney-in-Fact		

EXHIBIT INDEX

Exhibit Number	Description of Exhibit	Incorporated by Reference			Filing Date
		Form	File No.	Exhibit Number	
1	Form of Underwriting Agreement				*
3.1	Fifth Amended and Restated Certificate of Incorporation of the Registrant	10-Q	001-37359	3.1	November 9, 2015
3.2	Amended and Restated Bylaws of the Registrant	10-Q	001-37359	3.2	November 9, 2015
4.1	Second Amended and Restated Investors' Rights Agreement, dated as of November 7, 2014, by and among the Registrant and the Investors listed therein	S-1	333-202938	4.4	March 23, 2015
4.2	Form of Senior Indenture (including Form of Senior Note)	S-3	333-211266	4.2	May 10, 2016
4.3	Form of Subordinated Indenture (including Form of Subordinated Note)	S-3	333-211266	4.3	May 10, 2016
4.4	Form of Deposit Agreement				*
4.5	Form of Warrant Agreement				*
4.6	Form of Purchase Contract Agreement				*
4.7	Form of Unit Agreement				*
5.1	Opinion of Goodwin Procter LLP	S-3	333-211266	5.1	May 10, 2016
12.1	Calculation of Consolidated Ratios of Earnings to Fixed Charges	S-3	333-211266	12.1	May 10, 2016
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm for the Registrant				Filed herewith.
23.2	Consent of Goodwin Procter LLP (included in Exhibit 5.1)	S-3	333-211266	5.1	May 10, 2016
24.1	Powers of Attorney (included in the signature pages to the Registration Statement)	S-3	333-211266		May 10, 2016
25.1	The Statement of Eligibility on Form T-1 under the Trust Indenture Act of 1939, as amended, of the Trustee under the Senior Indenture				**
25.2	The Statement of Eligibility on Form T-1 under the Trust Indenture Act of 1939, as amended, of the Trustee under the Subordinated Indenture				**

* To be filed by amendment or by a Current Report on Form 8-K.

** To be filed pursuant to Section 305(b)(2) of the Trust Indenture Act of 1939, as amended.

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” in Amendment No. 1 to the Registration Statement (Form S-3 No. 333-211266) and related Prospectus of Blueprint Medicines Corporation for the registration of common stock, preferred stock, debt securities, depository shares, purchase contracts, purchase units, and warrants and to the incorporation by reference therein of our report dated March 11, 2016, with respect to the consolidated financial statements of Blueprint Medicines Corporation included in its Annual Report (Form 10-K) for the year ended December 31, 2015, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts
July 22, 2016
