

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

**FORM S-1
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)

2834
(Primary Standard Industrial
Classification Code Number)

26-3632015
(I.R.S. Employer
Identification No.)

**215 First Street
Cambridge, Massachusetts 02142
(617) 622-4003**
(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
215 First Street
Cambridge, MA 02142
(617) 374-7580**
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

**Kingsley L. Taft
Michael J. Minahan
Laurie A. Burlingame**
Goodwin Procter LLP
Exchange Place
Boston, Massachusetts 02109
(617) 570-1000

**Peter N. Handrinos
Ryan K. deFord**
Latham & Watkins LLP
John Hancock Tower
200 Clarendon Street
Boston, MA 02116
(617) 948-6000

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

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, 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, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. 333-202938

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 post-effective amendment filed pursuant to Rule 462(d) 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.

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 definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

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

Accelerated filer
Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Proposed maximum aggregate offering price(1)(2)	Amount of registration fee(2)
Common stock, \$0.001 par value per share	\$ 28,103,119	\$ 3,266

(1) In accordance with Rule 462(b) promulgated under the Securities Act of 1933, as amended, the Registrant is registering an additional amount of securities having a proposed maximum offering price of no more than 20% of the maximum aggregate offering price of the securities eligible to be sold under the related Registration Statement on Form S-1, as amended (File No. 333-203273). Includes the aggregate offering price of shares that may be purchased by the underwriters pursuant to an option to purchase additional shares.

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Includes the aggregate offering price of shares that may be purchased by the underwriters pursuant to an option to purchase additional shares. As permitted by Rule 457(o), the number of shares being registered and the proposed maximum offering price per share are not included in this table.

This registration statement shall become effective upon filing with the Commission in accordance with Rule 462(b) of the Securities Act of 1933, as amended.

EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

This Registration Statement is being filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the "Securities Act"). The contents of the Registration Statement on Form S-1 (File No. 333-202938) filed by Blueprint Medicines Corporation with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act, which was declared effective by the Commission on April 29, 2015, are incorporated by reference into this Registration Statement.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Cambridge, Commonwealth of Massachusetts, this 29th day of April, 2015.

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, this registration statement has been signed by the following persons in the capacities and on the date indicated below.

<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>)	April 29, 2015
<u>/s/ Kyle D. Kovalanka</u> Kyle D. Kovalanka	Chief Business Officer (<i>Principal Financial and Accounting Officer</i>)	April 29, 2015
<u>*</u> Daniel S. Lynch	Chairman of the Board	April 29, 2015
<u>*</u> Nicholas Lydon, Ph.D.	Director	April 29, 2015
<u>*</u> Alexis Borisy	Director	April 29, 2015
<u>*</u> George Demetri	Director	April 29, 2015
<u>*</u> Charles A. Rowland	Director	April 29, 2015

* Pursuant to Power of Attorney

By: /s/ Jeffrey W. Albers
 Jeffrey W. Albers
 Attorney-in-Fact

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EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
5.1	Opinion of Goodwin Procter LLP
23.1	Consent of Ernst & Young LLP
23.2	Consent of Goodwin Procter LLP (included in Exhibit 5.1)
24.1*	Power of Attorney

* Previously filed

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DELIVERY OF FINAL OPINION IS SUBJECT TO COMPLETION OF GOODWIN PROCTER LLP'S OPINION PRE-CLEARANCE PROCEDURES*

April 29, 2015

Blueprint Medicines Corporation
215 First Street
Cambridge, MA 02142

Re: Securities Registered under Registration Statement on Form S-1

Ladies and Gentlemen:

We have acted as counsel to you in connection with your filing of (i) a Registration Statement on Form S-1 (File No. 333-202938) (as amended or supplemented, the "Initial Registration Statement") pursuant to the Securities Act of 1933, as amended (the "Securities Act") and (ii) a second Registration Statement on Form S-1 filed pursuant to Rule 462(b) promulgated under the Securities Act (the "462(b) Registration Statement," and together with the Initial Registration Statement, the "Registration Statement"). This opinion letter is furnished to you in connection with your filing of the 462(b) Registration Statement, relating to the registration of the offering by Blueprint Medicines Corporation, a Delaware corporation (the "Company") of up to 1,102,083 shares (the "Shares") of the Company's Common Stock, \$0.001 par value per share, including Shares purchasable by the underwriters upon their exercise of an over-allotment option granted to the underwriters by the Company. The Shares are being sold to the several underwriters named in, and pursuant to, an underwriting agreement among the Company and such underwriters (the "Underwriting Agreement").

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinions set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, on certificates of officers of the Company.

The opinion set forth below is limited to the Delaware General Corporation Law (which includes reported judicial decisions interpreting the Delaware General Corporation Law).

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and, upon issuance and delivery against payment therefor in accordance with the terms of the Underwriting Agreement, the Shares will be validly issued, fully paid and non-assessable.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the 462(b) Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP
GOODWIN PROCTER LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-1 filed pursuant to Rule 462(b) of the Securities Act of 1933 of the reference to our firm under the caption "Experts" and our report dated February 19, 2015, except for Note 12B, as to which the date is April 20, 2015, with respect to the financial statements of Blueprint Medicines Corporation included in Amendment No. 2 to the Registration Statement (Form S-1 No. 333-202938) and related Prospectus of Blueprint Medicines Corporation for the registration of its common stock.

/s/ Ernst & Young LLP

Boston, Massachusetts

April 29, 2015
