

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

**FORM S-8
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

DIMENSION THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

46-3942159
(I.R.S. Employer
Identification No.)

**840 Memorial Drive, 4th Floor
Cambridge, MA 02139**
(Address of Principal Executive Offices)

**DIMENSION THERAPEUTICS, INC. 2015 STOCK OPTION AND INCENTIVE PLAN
DIMENSION THERAPEUTICS, INC. 2015 EMPLOYEE STOCK PURCHASE PLAN**
(Full title of the plans)

Annalisa Jenkins, M.B.B.S., F.R.C.P.
President and Chief Executive Officer
840 Memorial Drive, 4th Floor
Cambridge, MA 02139
(Name and address of agent for service)

(617) 401-0011
(Telephone number, including area code, of agent for service)

Copy to:

Kingsley L. Taft, Esq.
Caitlin L. Murray, Esq.
Goodwin Procter LLP
100 Northern Avenue
Boston, Massachusetts 02110
(617) 570-1000

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

CALCULATION OF REGISTRATION FEE

| Title of Securities to be Registered | Amount to be Registered(1) | Proposed Maximum Offering Price per Share | Proposed Maximum Aggregate Offering Price | Amount of Registration Fee |
|--|----------------------------------|--|--|-------------------------------|
| Common stock, \$0.0001 par value per share | 1,001,740(2) | \$1.78(4) | \$1,783,097.20 | \$206.66 |
| Common stock, \$0.0001 par value per share | 250,435(3) | \$1.78(4) | \$445,774.30 | \$51.67 |

| | | | | |
|-------|-----------|--|----------------|----------|
| Total | 1,252,175 | | \$2,228,871.50 | \$258.33 |
|-------|-----------|--|----------------|----------|

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall also cover any additional shares of common stock which become issuable under the above-named plans by reason of any stock dividend, stock split, recapitalization or any other similar transaction effected without the receipt of consideration which results in an increase in the number of our outstanding shares of common stock. In addition, pursuant to Rule 416(c) under the Securities Act, this registration statement also covers an indeterminate amount of interests to be offered or sold pursuant to the employee benefit plan(s) described herein.
 - (2) Represents an automatic annual increase on January 1, 2017 to the number of shares of common stock reserved for issuance under the 2015 Stock Option and Incentive Plan (the "2015 Plan") pursuant to the terms of the 2015 Plan. Shares available for issuance under the 2015 Plan were previously registered on a registration statement on Form S-8 filed with the Securities and Exchange Commission on November 5, 2015 (Registration No. 333-207835) and May 20, 2016 (Registration No. 333-211502).
 - (3) Represents an automatic annual increase on January 1, 2017 to the number of shares of common stock reserved for issuance under the 2015 Employee Stock Purchase Plan (the "2015 ESPP") pursuant to the terms of the 2015 ESPP. Shares available for issuance under the 2015 ESPP were previously registered on a registration statement on Form S-8 filed with the Securities and Exchange Commission on November 5, 2015 (Registration No. 333-207835).
 - (4) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) of the Securities Act, and based on \$1.78, which represents the average of the high and low prices reported on the Nasdaq Global Select Market on March 8, 2017.
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EXPLANATORY NOTE

This Registration Statement on Form S-8 registers additional shares of Common Stock under the Registrant's 2015 Plan and 2015 ESPP.

The number of shares of Common Stock reserved and available for issuance under the 2015 Plan is subject to an automatic annual increase on each January 1, beginning in 2016, by an amount equal to the lesser of (i) 4.0% of the number of shares of common stock issued and outstanding on the immediately preceding December 31 or (ii) such amount as determined by the Administrator (as defined in the 2015 Plan). Accordingly, on January 1, 2017, the number of shares of Common Stock reserved and available for issuance under the 2015 Plan increased by 1,001,740 shares. This Registration Statement registers these additional 1,001,740 shares of Common Stock. The additional shares are of the same class as other securities relating to the 2015 Plan for which our registration statements filed on Form S-8 (Registration Nos. 333-207835 and 333-211502) on November 5, 2015 and May 20, 2016, respectively, are effective.

The number of shares of Common Stock reserved and available for issuance under the 2015 ESPP is subject to an automatic annual increase on each January 1, beginning in 2017, by an amount equal to the lesser of (i) 256,585 shares of common stock, (ii) 1% of the number of shares of common stock issued and outstanding on the immediately preceding December 31 or (iii) an amount determined by the Administrator (as defined in the 2015 ESPP). Accordingly, on January 1, 2017, the number of shares of Common Stock reserved and available for issuance under the 2015 ESPP increased by 250,435 shares. This Registration Statement registers these additional 250,435 shares of Common Stock. The additional shares are of the same class as other securities relating to the 2015 ESPP for which our registration statement filed on Form S-8 (Registration Nos. 333-207835) on November 5, 2015, is effective.

The information contained in our registration statements on Form S-8 (Registration Nos. 333-207835 and 333-211502) is hereby incorporated by reference pursuant to General Instruction E.

Part II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 8. Exhibits.

See the Exhibit Index on the page immediately preceding the exhibits for a list of exhibits filed as part of this registration statement, which Exhibit Index is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and 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, on the 10th day of March, 2017.

DIMENSION THERAPEUTICS, INC.

By: /s/ Annalisa Jenkins
Annalisa Jenkins, M.B.B.S, F.R.C.P.
President and Chief Executive Officer

POWER OF ATTORNEY AND SIGNATURES

KNOW ALL BY THESE PRESENT, that each individual whose signature appears below hereby constitutes and appoints each of Annalisa Jenkins, Jean Franchi and Mary Thistle as such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-8, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following person in the capacities and on the date indicated.

| <u>Name</u> | <u>Title</u> | <u>Date</u> |
|---|--|----------------|
| <u>/s/ Annalisa Jenkins</u> Annalisa Jenkins | President, Chief Executive Officer and Director (Principal Executive Officer) | March 10, 2017 |
| <u>/s/ Jean Franchi</u> Jean Franchi | Chief Financial Officer (Principal Financial and Accounting Officer) | March 10, 2017 |
| <u>/s/ Alan Colowick</u> Alan Colowick | Director | March 10, 2017 |
| <u>/s/ Michael Dybbs</u> Michael Dybbs | Director | March 10, 2017 |
| <u>/s/ Georges Gemayel</u> Georges Gemayel | Director | March 10, 2017 |
| <u>/s/ Rishi Gupta</u> Rishi Gupta | Director | March 10, 2017 |
| <u>/s/ John Hohneker</u> John Hohneker | Director | March 10, 2017 |
| <u>/s/ George V. Migausky</u> George V. Migausky | Director | March 10, 2017 |
| <u>/s/ Arlene Morris</u> Arlene Morris | Director | March 10, 2017 |

EXHIBIT INDEX

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|---|
| 4.1 | Specimen Common Stock Certificate of the registrant (Incorporated by reference to Exhibit 4.1 to the registrant's Registration Statement on Form S-1, as amended (File No. 333-206911)). |
| 4.2 | Form of Fourth Amended and Restated Certificate of Incorporation (Incorporated by reference to Exhibit 3.2 to the registrant's Registration Statement on Form S-1, as amended (File No. 333-206911)). |
| 4.3 | Form of Amended and Restated Bylaws (Incorporated by reference to Exhibit 3.4 to the registrant's Registration Statement on Form S-1, as amended (File No. 333-206911)). |
| 4.4 | Amended and Restated Investors' Rights Agreement by and among the registrant and certain of its stockholders, dated April 20, 2015 (Incorporated by reference to Exhibit 4.2 to the registrant's Registration Statement on Form S-1, as amended (File No. 333-206911)). |
| 5.1* | Opinion of Goodwin Procter LLP. |
| 23.1* | Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm. |
| 23.2* | Consent of Goodwin Procter LLP (included in Exhibit 5.1). |
| 24.1* | Power of attorney (included on signature page). |
| 99.1 | 2015 Stock Option and Incentive Plan and forms of award agreements thereunder (Incorporated by reference to Exhibit 10.1 to the registrant's Registration Statement on Form S-1, as amended (File No. 333-206911)). |
| 99.2 | 2015 Employee Stock Purchase Plan (Incorporated by reference to Exhibit 10.3 to the registrant's Registration Statement on Form S-1, as amended (File No. 333-206911)). |

* Filed herewith.

March 10, 2017

Dimension Therapeutics, Inc.
840 Memorial Drive, 4th Floor
Cambridge, MA 02139

Re: Securities Being Registered under Registration Statement on Form S-8

Ladies and Gentlemen:

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-8 (the "Registration Statement") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), on or about the date hereof relating to an aggregate of 1,252,175 shares (the "Shares") of Common Stock, \$0.0001 par value per share, of Dimension Therapeutics, Inc., a Delaware corporation (the "Company"), that may be issued pursuant to the Company's 2015 Stock Option and Incentive Plan and 2015 Employee Stock Purchase Plan (collectively, the "Plans").

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 opinion set forth below, on certificates of officers of the Company.

The opinion set forth below is limited to the Delaware General Corporation Law.

For purposes of the opinion set forth below, we have assumed that a sufficient number of authorized but unissued shares of the Company's Common Stock will be available for issuance when the Shares are issued.

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 Plans, will be validly issued, fully paid and nonassessable.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to 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 hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 9, 2017 relating to the financial statements, which appears in Dimension Therapeutics, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
March 9, 2017