

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

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

DISCOVERY LABORATORIES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or Other Jurisdiction of Incorporation)

94-3171943
(I.R.S. Employer Identification Number)

2600 Kelly Road, Suite 100
Warrington, Pennsylvania 18976-3622
(Address, including zip code, of Principal Executive Offices)

Discovery Laboratories, Inc. 401(k) Plan
(Full title of the plan)

Mary B. Templeton, Esq.
Senior Vice President, General Counsel and Corporate Secretary
Discovery Laboratories, Inc.
2600 Kelly Road, Suite 100
Warrington, Pennsylvania 18976
(215) 488-9300
(Name and address, and telephone number, including area code, of agent for service)

Copies to:
Ira L. Kotel, Esq.
Dentons US LLP
1221 Avenue of the Americas
New York, New York 10020
(212) 768-6700

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
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 | Amount to be Registered | Proposed Maximum Offering Price Per Share(1) | Proposed Maximum Aggregate Offering Price(1) | Amount of Registration Fee |
|--------------------------------------|-------------------------|--|--|----------------------------|
| Common Stock, \$0.001 par value | 1,100,000 (2) | \$ 0.22 | \$ 242,000 | \$ 24.37 |

- (1) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and (h) promulgated under the Securities Act by taking the average of the high and low sales price per share of the Common Stock on The Nasdaq Capital Market on January 4, 2016.
- (2) Represents an additional 1,100,000 shares of Common Stock, par value \$0.001 per share, issuable under the Discovery Laboratories, Inc. 401(k) Plan (the "401(k) Plan"). The issuance of such shares under the 401(k) Plan was approved by the Board of Directors on October 27, 2015. The 401(k) Plan qualifies as an employee benefit plan as defined under Rule 405 of Regulation C. Pursuant to Rule 416 promulgated under the Securities Act, this registration statement shall be deemed to cover any additional securities that become issuable under the 401(k) Plan by reason of any stock splits, stock dividends or recapitalizations or other similar transactions.

EXPLANATORY NOTE

This registration statement is being filed to register the issuance of an additional 1,100,000 shares of Common Stock that may be issued pursuant to the Discovery Laboratories, Inc. (the "Company") 401(k) Plan ("401(k) Plan"), plus any additional securities that become issuable under the 401(k) Plan by reason of any stock splits, stock dividends or recapitalizations or other similar transactions.

The Company previously registered shares of Common Stock for issuance under the 401(k) Plan on registration statements on Form S-8 filed with the Securities and Exchange Commission (the "Commission") on November 12, 2003 (File No. 333-110412), September 28, 2006 (File No. 333-137643), December 23, 2008 (File No. 333-156443), January 22, 2010 (File No. 333-164470), March 31, 2010 (File No. 333-165809), September 30, 2010 (File No. 333-169662), April 1, 2011 (File No. 333-173259), March 30, 2012 (File No. 333-1804970), March 22, 2013 (File No. 333-187486), June 30, 2014 (File No. 333-197139), and January 14, 2015 (File No. 333-201478). Pursuant to General Instruction E to Form S-8 and with respect to the additional shares of Common Stock registered hereunder for issuance under the 401(k) Plan, the contents of such registration statements, including all exhibits thereto as applicable, are incorporated herein by reference.

All documents subsequently filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), prior to the filing of a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of such documents. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in Part I, Items 1 and 2, will be delivered to each of the participants in accordance with Rule 428 under the Securities Act of 1933, as amended ("Securities Act"), and the Note to Part I of Form S-8. Those documents do not need to be filed with the Commission either as part of this registration statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act. These documents and the documents incorporated by reference in this registration statement pursuant to Item 3 of Part II of this registration statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

The following documents have been filed by the Company with the Commission and are hereby incorporated by reference in this registration statement:

- (a) The Company's Annual Report on Form 10-K for the year ended December 31, 2014, filed on March 16, 2015;
- (b) The Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015, filed on May 11, 2015;
- (c) The Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015, filed on August 10, 2015;
- (d) The Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015, filed on November 5, 2015;
- (e) The Company's Current Reports on Form 8-K filed on January 2, 2015, March 17, 2015 (excluding the matters in Item 2.02 and any information pertaining to such Item in Exhibit 99.1 therein, which are not incorporated by reference herein), March 31, 2015, April 16, 2015, May 8, 2015 (excluding the matters in Item 2.02 and any information pertaining to such Item in Exhibit 99.1 therein, which are not incorporated by reference herein), May 15, 2015, June 9, 2015, July 1, 2015, July 9, 2015, July 17, 2015, July 24, 2015, August 10, 2015 (excluding the matters in Item 2.02 and any information pertaining to such Item in Exhibit 99.1 therein, which are not incorporated by reference herein), November 5, 2015 (excluding the matters in Item 2.02 and any information pertaining to such Item in Exhibit 99.1 therein, which are not incorporated by reference herein), November 12, 2015 (excluding the matters in Item 7.01 and any information pertaining to such Item in Exhibit 99.1 therein, which are not incorporated by reference herein), and December 29, 2015;
- (f) The Company's Definitive Proxy Statement filed with the Commission on April 29, 2015, including any amendments or supplements filed for the purpose of updating same;
- (g) The Company's Definitive Proxy Statement filed with the Commission on December 14, 2015, including any amendments or supplements filed for the purpose of updating same; and
- (h) The description of the Company's Common Stock contained in the Company's registration statement on Form 8-A filed with the SEC on July 13, 1995 and February 6, 2004.

All documents subsequently filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of such documents. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 8. EXHIBITS

| <u>Exhibit No.</u> | <u>Description</u> | <u>Method of Filing</u> |
|----------------------|---|-------------------------|
| 5.1 | Opinion of Dentons US LLP, legal counsel.* | Filed herewith. |
| 23.1 | Consent of Dentons US LLP (included in Exhibit 5.1) | Filed herewith. |
| 23.2 | Consent of Ernst & Young LLP, independent registered public accounting firm. | Filed herewith. |
| 24.1 | Powers of Attorney (included on signature page to this registration statement). | Filed herewith. |

* In accordance with Item 8 of Form S-8, and in lieu of the opinion of counsel or determination contemplated by Item 601(b)(5) of Regulation S-K, the Company hereby undertakes that it will submit the Plan and all amendments thereto to the Internal Revenue Service ("IRS") in a timely manner, and that it will make all changes required by the IRS in order to qualify the Plan.

SIGNATURES

Pursuant to the requirements of the Securities Act, 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 Warrington, Commonwealth of Pennsylvania on this 5th day of January, 2016.

DISCOVERY LABORATORIES, INC.

(Registrant)

By: /s/ John G. Cooper

John G. Cooper

President and Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned officers and directors of Discovery Laboratories, Inc., and each of us, do hereby constitute and appoint each of John G. Cooper, Mary B. Templeton, Esq., and John A. Tattory, or any of them, each acting alone, his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, to do any and all acts and things in our name, place and stead, in any and all capacities, in connection with this registration statement on Form S-8 under the Securities, or any registration statement for the same offering that is to be effective upon filing under the Securities Act, including, without limitation, to sign for us or any of us in our names in the capacities indicated below any and all amendments or supplements to this registration statement, including any and all post-effective amendments to the registration statement, and to sign any and all additional registration statements relating to the same offering of securities as this registration statement that are filed pursuant to Rule 462(b) under the Securities Act, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Commission and any applicable securities exchange or securities self-regulatory body, granting unto said attorneys-in-fact and agents, each acting alone, 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 he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities indicated on the dates indicated.

| <u>Signature</u> | <u>Name and Title</u> | <u>Date</u> |
|---------------------------------|---|-----------------|
| <u>/s/ John G. Cooper</u> | John G. Cooper President, Chief Executive Officer and Director (Principal Executive Officer) | January 5, 2016 |
| <u>/s/ John A. Tattory</u> | John A. Tattory Senior Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer) | January 5, 2016 |
| <u>/s/ John R. Leone</u> | John R. Leone Chairman of the Board of Directors | January 5, 2016 |
| <u>/s/ Joseph M. Mahady</u> | Joseph M. Mahady Director | January 5, 2016 |
| <u>/s/ Bruce A. Peacock</u> | Bruce A. Peacock Director | January 5, 2016 |
| <u>/s/ Marvin E. Rosenthale</u> | Marvin E. Rosenthale, Ph.D. Director | January 5, 2016 |

Dentons US LLP
1221 Avenue of the Americas
New York, NY 10020-1089
United States

 Salans FMC SNR Denton McKenna Long
dentons.com

January 5, 2016

Board of Directors
Discovery Laboratories, Inc.
2600 Kelly Road, Suite 100
Warrington, Pennsylvania 18976

Re: Discovery Laboratories, Inc.-- Registration Statement on Form S-8

Gentlemen:

We have acted as counsel to Discovery Laboratories, Inc., a corporation organized under the laws of the State of Delaware (the "Company"), in connection with the registration under the Securities Act of 1933, as amended (the "Securities Act"), of the issuance from to time to time of 1,100,000 shares (the "Shares") of the Company's common stock, par value \$0.001 per share, pursuant to the Company's 401(k) Plan (the "Plan") on a Registration Statement on Form S-8 being filed on the date hereof by the Company with the U.S. Securities and Exchange Commission (the "Commission"), as it may be amended (the "Registration Statement").

We are delivering this opinion to you in accordance with your request and the requirements of Item 8 of Form S-8 and Item 601(b)(5) of Regulation S-K promulgated by the Commission.

In connection with rendering this opinion, we have examined originals, certified copies or copies otherwise identified as being true copies of the following:

- (a) the Registration Statement;
- (b) the Restated Certificate of Incorporation of the Company, as amended and restated to date;
- (c) the Amended and Restated Bylaws of the Company, as amended to date;
- (d) corporate proceedings of the Company relating to its proposed issuance of the Shares;
- (e) the Plan; and
- (f) such other instruments and documents as we have deemed relevant or necessary in connection with our opinion set forth herein.

In our examination, we have assumed (i) the genuineness of all signatures; (ii) the authenticity of all documents submitted to us as originals; (iii) the conformity to original documents of all documents submitted to us as certified, conformed, photostatic, electronic or facsimile copies and the authenticity of the originals of such documents; (iv) the authority of all persons signing any document; (v) the enforceability of all the documents and agreements we have reviewed in accordance with their respective terms against the parties thereto; and (vi) the truth and accuracy of all matters of fact set forth in all certificates and other instruments furnished to us.

Based on the foregoing, and in reliance thereon, and subject to the qualifications, limitations and exceptions stated herein, we are of the opinion, having due regard for such legal considerations as we deem relevant, that the Shares have been duly authorized and, when sold and paid for in accordance with the terms and conditions set forth in the Plan, will be validly issued, fully paid and non-assessable.

We express no opinion as to the laws of any jurisdiction other than Delaware corporate Law.

This opinion is rendered on the date hereof, and we have no continuing obligation hereunder to inform you of changes of law or fact subsequent to the date hereof or facts of which we have become aware after the date hereof.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement. In giving this consent, we do not hereby admit that we are within the category of persons whose consent is required by Section 7 of the Securities Act or the rules and regulations promulgated thereunder by the Commission.

Very truly yours,

/s/ Dentons US LLP
Dentons US LLP

Exhibit 23.2

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 333-00000) pertaining to the Discovery Laboratories, Inc. 401(k) Plan of our reports dated March 16, 2015, with respect to the consolidated financial statements of Discovery Laboratories, Inc. and the effectiveness of internal control over financial reporting of Discovery Laboratories, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2014, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Philadelphia, Pennsylvania
January 5, 2016
