

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

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

ASSEMBLY BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware
 (State or other jurisdiction of
 incorporation or organization)

20-8729264
 (I.R.S. Employer
 Identification No.)

101 Sixth Avenue, Ninth Floor
New York, NY 10013
 (Address of Principal Executive Offices)

Assembly Biosciences, Inc. Amended and Restated 2014 Stock Incentive Plan
 (Full title of the plan)

Derek Small
President and Chief Executive Officer
101 Sixth Avenue, Ninth Floor
New York, NY 10013
 (Name and address of agent for service)

(646) 706-5208
 (Telephone number, including area code, of agent for service)

Copies to:
Mitchell S. Bloom, Esq.
Maggie L. Wong, Esq.
Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210
Telephone: (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. (Check one):

Large accelerated filer	<input type="checkbox"/>		Accelerated filer	x
Non-accelerated filer	<input type="checkbox"/> (Do not check if a smaller reporting company)		Smaller reporting company	<input type="checkbox"/>

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share(2)	Proposed maximum aggregate offering price(2)	Amount of registration fee
Common stock, \$0.001 par value per share	1,600,000 (3)	\$6.01	\$9,616,000	\$968.34

(1) In addition to the shares set forth in the table, pursuant to Rule 416 of the Securities Act, the number of shares registered includes an indeterminable number of shares of common stock issuable under the Assembly Biosciences, Inc. (the "Company") Amended and Restated 2014 Stock Incentive Plan (the "Plan"), as this amount may be adjusted as a result of stock splits, stock dividends, and anti-dilution provisions.

- (2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457 of the Securities Act, and based on the average of the high and low sales prices of the registrant's common stock, as quoted on the Nasdaq Capital Market, on August 5, 2016.
- (3) Represents 1,600,000 shares of common stock that were added to the shares reserved and available for issuance under the Plan on June 2, 2016 upon stockholder approval at the Company's 2016 Annual Meeting of Stockholders.

Proposed sales to take place as soon after the effective date of the registration statement as awards are granted, exercised or distributed under the Plan.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in "Item 1. Plan Information" and "Item 2. Registrant Information and Employee Plan Annual Information" of Form S-8 will be sent or given to participants of Assembly Biosciences, Inc. Amended and Restated 2014 Stock Incentive Plan, as specified by Rule 428(b)(1) under the Securities Act of 1933, as amended (the "Securities Act"). Such documents are not required to be, and are not, filed with the Securities and Exchange Commission (the "Commission") either as part of this Registration Statement or as a prospectus or prospectus supplement 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 Form S-8, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents filed with the Commission by the registrant are incorporated by reference into this registration statement:

- (a) The registrant's Annual Report on Form 10-K for the year ended December 31, 2015;
- (b) The registrant's Quarterly Reports on Form 10-Q for the quarters ended June 30, 2016 and March 31, 2016, respectively;
- (c) The registrant's Current Report on Form 8-K filed with the Commission on June 6, 2016; and
- (d) The description of the registrant's common stock in the registrant's registration statement on Form 8-A (File No. 001-350005) filed with the Commission on December 10, 2010, including any amendment or report filed by the registrant for the purpose of updating such description.

All documents subsequently filed by the registrant pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the filing of a post-effective amendment to the registration statement which indicates that all of the shares of common stock registered hereunder have been sold or which deregisters all of such shares then remaining unsold, shall be deemed to be incorporated by reference into this registration statement and to be a part hereof from the respective dates of filing of such documents, except as to any portion of any future annual or quarterly report to stockholders or document or current report furnished under current Items 2.02 or 7.01 of Form 8-K that is not deemed filed under such provisions. Any statement contained 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 that also is or is deemed to be incorporated by reference herein, modifies or supersedes such earlier 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.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

None.

Item 6. Indemnification of Directors and Officers.

The registrant is incorporated under the laws of the State of Delaware. Section 145 of the Delaware General Corporation Law (the "DGCL") provides that a Delaware corporation may indemnify any persons who are, or are threatened to be made, parties to any threatened, pending, or completed action, suit, or proceeding, whether civil, criminal, administrative, or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person was an officer, director, employee, or agent of such corporation, or is or was serving at the request of such person as an officer, director, employee, or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit, or proceeding, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was illegal.

Section 145 of the DGCL also gives a corporation the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper. Section 145 further provides that, to the extent that a present or former director or officer of a corporation has been successful on the merits or otherwise in defense of any such action, suit or proceeding, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

The registrant's Amended and Restated Bylaws provide that:

- the registrant shall indemnify its directors, officers and, in the discretion of its board of directors, certain employees and agents to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and
- the registrant shall advance reasonable expenses, including attorneys' fees, to its directors and officers in connection with legal proceedings relating to their service for or on behalf of the registrant, subject to limited exceptions.

Section 145 of the DGCL also authorizes a corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against any liability asserted against him and incurred by him in any such capacity, arising out of his status as such, whether or not the corporation would otherwise have the power to indemnify him under Section 145. The registrant maintains general liability insurance which covers certain liabilities of its directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act.

The registrant has adopted provisions in the registrant's certificate of incorporation that limit or eliminate the personal liability of the registrant's directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to the registrant or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to the registrant or its stockholders;
 - any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
 - any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions under Section 174 of the DGCL; or
 - any transaction from which the director derived an improper personal benefit.
-

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

Item 7. Exemption from Registration Claimed.

Not applicable.

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 on Form S-8, which Exhibit Index is incorporated herein by reference.

Item 9. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information in this registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section shall not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(h) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

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 New York, State of New York, this 9th day of August, 2016.

ASSEMBLY BIOSCIENCES, INC.

By: /s/ Derek Small

Derek Small

President and Chief Executive Officer

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of Assembly Biosciences, Inc., hereby severally constitute and appoint Derek Small and David J. Barrett, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign for us and in our names in the capacities indicated below 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 other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full 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 any of them, or their or his substitute or substitutes, 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 persons in the capacities and on the date indicated below.

Signature	Title	Date
/s/ Derek Small Derek Small	President, Chief Executive Officer and Director (Principal Executive Officer)	August 9, 2016
/s/ David J. Barrett David J. Barrett	Chief Financial Officer and Chief Operating Officer (Principal Financial and Accounting Officer)	August 9, 2016
/s/ Anthony E. Altig Anthony E. Altig	Director	August 9, 2016
/s/ Mark Auerbach Mark Auerbach	Director	August 9, 2016
/s/ Richard DiMarchi Richard DiMarchi, PhD	Director	August 9, 2016
/s/ Myron Z. Holubiak Myron Z. Holubiak	Director	August 9, 2016
/s/ Alan J. Lewis Alan J. Lewis, PhD	Director	August 9, 2016
/s/ William Ringo William Ringo	Director	August 9, 2016

EXHIBIT INDEX

Exhibit No.	Description
4.1	Amended and Restated Certificate of Incorporation of the Registrant (1)
4.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Registrant (2)
4.3	Amended and Restated Bylaws of the Registrant (3)
4.4	Specimen Common Stock Certificate (4)
4.5	Amended and Restated 2014 Stock Incentive Plan (5)
5.1*	Opinion of Goodwin Procter LLP
23.1*	Consent of Ernst & Young, LLP, Independent Registered Public Accounting Firm
23.2*	Consent of EisnerAmper LLP, Independent Registered Public Accounting Firm
23.3*	Consent of Goodwin Procter LLP (included in Exhibit 5.1)
24.1*	Power of Attorney (included on signature page)

* Filed herewith.

- (1) Filed as Exhibit 3.1 to the Registrant's Amendment No. 3 to Registration Statement on Form S-1 (File No. 333-168224), filed on November 16, 2010 and incorporated herein by reference.
 - (2) Filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-35005), filed on July 14, 2014 and incorporated herein by reference.
 - (3) Filed as Exhibit 3.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-168224), filed on July 20, 2010 and incorporated herein by reference.
 - (4) Filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-3 (File No. 333-208806), filed on December 30, 2015 and incorporated herein by reference.
 - (5) Filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-35005), filed on June 6, 2016 and incorporated herein by reference.
-



Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210
goodwinlaw.com
+1 617 570 1000

August 9, 2016

Assembly Biosciences, Inc.
101 Sixth Avenue
Ninth Floor
New York, New York 10013

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 1,600,000 shares (the "Shares") of Common Stock, \$0.001 par value per share, of Assembly Biosciences, Inc., a Delaware corporation (the "Company"), that may be issued pursuant to the Company's Amended and Restated 2014 Stock Incentive Plan (the "Plan").

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 (which includes reported judicial decisions interpreting 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 Plan, 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 consent to the incorporation by reference in this Registration Statement on Form S-8 pertaining to the Amended and Restated 2014 Stock Incentive Plan of Assembly Biosciences, Inc., of our reports dated March 11, 2016, with respect to the consolidated financial statements of Assembly Biosciences, Inc. and the effectiveness of internal control over financial reporting of Assembly Biosciences, Inc. 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

New York, New York
August 9, 2016

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement of Assembly Biosciences, Inc. on Form S-8 (No. 333-xxxxxx) to be filed on or about August 9, 2016 of our report dated March 12, 2015 on our audit of the consolidated financial statements as of December 31, 2014 and for the year then ended, which report was included in the Annual Report on Form 10-K filed March 11, 2016.

/s/ EisnerAmper LLP

New York, New York
August 9, 2016
