

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

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

SYNTHETIC BIOLOGICS, INC.  
(Exact name of registrant as specified in its charter)

Nevada  
(State or other jurisdiction of  
incorporation or organization)

13-3808303  
(IRS Employer  
Identification No.)

155 Gibbs Street, Suite 412  
Rockville, Maryland 20850  
(Address, of principal executive offices)

Adeona Pharmaceuticals, Inc. 2010 Incentive Stock Plan  
(Full title of the plan)

Jeffrey Riley  
Chief Executive Officer  
155 Gibbs Street, Suite 412  
Rockville, Maryland 20850  
(Name and address of agent for service)

(734) 282-7800  
(Telephone number, including area code, of agent for service)

Copy to:

Leslie Marlow, Esq.  
Gracin & Marlow, LLP  
The Chrysler Building  
405 Lexington Avenue, 26<sup>th</sup> Floor  
New York, New York 10174

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. (Check one):

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

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# CALCULATION OF REGISTRATION FEE

Title of securities to be registered (1)	Amount to be Registered (2)	Proposed maximum offering price per share (3)	Proposed maximum aggregate offering price (1)	Amount of registration fee(4)
Common Stock, par value \$0.001 per share	3,000,000	\$ 1.45	\$ 4,350,000	\$ 560.28

(1)The securities to be registered include options and rights to acquire the common stock of Synthetic Biologics, Inc.

(2)Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement also covers any additional securities that may be offered or issued in connection with any stock split, stock dividend or similar transaction.

(3)Estimated pursuant to Rule 457(c) and 457(h) of the Securities Act solely for purposes of calculating the registration fee. The price for the shares under the plan is based upon the average of the high and low prices of the Common Stock on November 12, 2013, as reported by the NYSE MKT.

(4)Calculated under Section 6(b) of the Securities Act of 1933 as .0001288 of the aggregate offering price.

## Explanatory Note

The Registrant filed with the Securities and Exchange Commission (the "SEC") its Registration Statement on Form S-8, Registration No. 333-170858, on November 29, 2010 (the "2010 Registration Statement") pursuant to and in accordance with the requirements of General Instruction E to Form S-8 for the purpose of registering under the Securities Act of 1933 3,000,000 shares of Common Stock to be offered and sold under the Registrant's 2010 Stock Incentive Plan (the "2010 Plan"). Pursuant to General Instruction E to Form S-8, the contents of the 2010 Registration Statement are incorporated into this Registration Statement by reference.

This Registration Statement on Form S-8 has been prepared and filed pursuant to and in accordance with the requirements of General Instruction E to Form S-8 for the purpose of registering under the Securities Act 3,000,000 additional shares of Common Stock to be offered and sold under the 2010 Plan. These shares represented 3,000,000 shares of Common Stock that were added to the 2010 Plan as of October 22, 2013 by vote of the Registrant's stockholders and, in accordance with the terms of the 2010 Plan, are to be assigned to and made available for grant under the 2010 Plan.

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## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 3. Incorporation of Documents By Reference.

The Company has filed the documents listed below with the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and these documents are incorporated into this registration statement by reference:

- Our Annual Report on Form 10-K for the year ended December 31, 2012, filed with the Securities and Exchange Commission on April 16, 2013;
- The description of our common stock contained in our registration statement on Form 8-A filed with the Securities and Exchange Commission on June 20, 2007 (File No. 001-12584);
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on January 8, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on February 11, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on April 16, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on April 19, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on May 14, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on May 15, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on May 20, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on June 25, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on June 27, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on August 14, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on September 9, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on October 15, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on October 25, 2013;
- Our Current Report on Form 8-K filed with the Securities and Exchange Commission on November 14, 2013;
- Our Quarterly Report on Form 10-Q for the Quarter ended March 31, 2013, filed with the Securities and Exchange Commission on May 15, 2013;

- Our Quarterly Report on Form 10-Q for the Quarter ended June 30, 2013, filed with the Securities and Exchange Commission on August 14, 2013;
- Our Quarterly Report on Form 10-Q for the Quarter ended September 30, 2013, filed with the Securities and Exchange Commission on November 14, 2013.

All documents filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act subsequent to the date hereof and prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be a part hereof from the date of filing of such documents.

Item 4. Description of Securities.

The class of securities to be offered is registered under Section 12 of the Exchange Act.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 78.138 of the Nevada Revised Statutes provides that a director or officer is not individually liable to the corporation or its stockholders or creditors for any damages as a result of any act or failure to act in his capacity as a director or officer unless it is proven that (1) his act or failure to act constituted a breach of his fiduciary duties as a director or officer and (2) his breach of those duties involved intentional misconduct, fraud or a knowing violation of law.

This provision is intended to afford directors and officers protection against and to limit their potential liability for monetary damages resulting from suits alleging a breach of the duty of care by a director or officer. As a consequence of this provision, stockholders of our company will be unable to recover monetary damages against directors or officers for action taken by them that may constitute negligence or gross negligence in performance of their duties unless such conduct falls within one of the foregoing exceptions. The provision, however, does not alter the applicable standards governing a director's or officer's fiduciary duty and does not eliminate or limit the right of our company or any stockholder to obtain an injunction or any other type of non-monetary relief in the event of a breach of fiduciary duty.

The Registrant's Articles of Incorporation, as amended, and amended and restated bylaws provide for indemnification of directors, officers, employees or agents of the Registrant to the fullest extent permitted by Nevada law (as amended from time to time). Section 78.7502 of the Nevada Revised Statutes provides that such indemnification may only be provided if the person acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the best interest of the Registrant and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

Exhibits filed with this Amendment:

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| 4.1  | Registrant's 2010 Incentive Stock Plan, as amended and restated on September 17, 2013* |
| 5.1  | Opinion of Counsel re: legality of securities being registered*                        |
| 23.1 | Consent of BDO USA, LLP*   |
| 23.2 | Consent of Berman & Company, P.A.*   |
| 23.3 | Consent of Counsel (contained in Exhibit 5.1 hereof)*                                  |
| 24.1 | Power of Attorney of directors and certain officers of the Company*                    |

\*Filed Herewith

Item 9. Undertakings.

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 the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth 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 this registration statement;

*Provided, however,* that paragraphs (a)(1)(i) and (a)(1)(ii) of this section do not apply if the registration statement is on Form S-8 and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Securities Exchange Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the 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 herein, 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.

(4) 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 Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(5) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to existing provisions or arrangements whereby the registrant may indemnify a trustee, officer or controlling person of the registrant against liabilities arising under the Securities Act, 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 trustee, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such trustee, 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 Rockville and State of Maryland, on the 15th day of November, 2013.

SYNTHETIC BIOLOGICS, INC.

By: /s/ Jeffrey Riley  
Chief Executive Officer,  
President and Director  
(Principal Executive Officer)

By: /s/ C. Evan Ballantyne  
Chief Financial Officer  
(Principal Financial Officer)

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
Jeffrey Riley*	Chief Executive Officer (Principal Executive Officer) and Director	†
C. Evan Ballantyne*	Chief Financial Officer (Principal Financial Officer)	†
Jeffrey J. Kraws *	Chairman	†
Steve H. Kanzer*	Director	†
Scott L. Tarriff*	Director	†
Jeffrey Wolf*	Director	†
* By: /s/ Jeffrey Riley Jeffrey Riley	Individually and as Attorney-in-fact	
* By: /s/ C. Evan Ballantyne C. Evan Ballantyne	Individually and as Attorney-in-fact	

† November 15, 2013



EXHIBIT INDEX

Exhibit No.

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- 23.2 Consent of Berman & Company, P.A.\*
- 23.3 Consent of Counsel (contained in Exhibit 5.1 hereof)\*
- 24.1 Power of Attorney of directors and certain officers of the Company\*

\*Filed Herewith

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