

# SYNTHETIC BIOLOGICS, INC.

## FORM S-8

(Securities Registration: Employee Benefit Plan)

Filed 08/31/16

Address	617 DETROIT STREET, SUITE 100 ANN ARBOR, MI 48104
Telephone	(734) 332-7800
CIK	0000894158
Symbol	SYN
SIC Code	2834 - Pharmaceutical Preparations
Industry	Biotechnology & Drugs
Sector	Healthcare
Fiscal Year	12/31

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.)

**9605 Medical Center Drive, Suite 270**  
**Rockville, Maryland 20850**  
(Address, of principal executive offices)

**Synthetic Biologics, Inc. 2010 Incentive Stock Plan**  
(Full title of the plan)

**Jeffrey Riley**  
**Chief Executive Officer**  
**9605 Medical Center Drive, Suite 270**  
**Rockville, Maryland 20850**  
(Name and address of agent for service)

**(301) 417-4364**  
(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       Accelerated filer       Non-accelerated filer       Smaller reporting company   
(do not check if smaller reporting company)



CALCULATION OF REGISTRATION FEE

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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	<u>6,000,000</u>	<u>\$ 1.60</u>	<u>\$ 9,600,000</u>	<u>\$ 967</u>

- (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 sale prices of the Common Stock on August 26, 2016, as reported by the NYSE MKT.
  - (4) Calculated pursuant to Section 6(b) of the Securities Act as .00010070 of the proposed maximum aggregate offering price.
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### **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, as amended (the “Securities Act”), 3,000,000 shares of the Registrant’s common stock, par value \$0.001 per share (the “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.

The Registrant filed with the SEC its Registration Statement on Form S-8 (Registration No. 333-192355) on November 15, 2013 (the “2013 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 an additional 3,000,000 shares of Common Stock to be offered and sold under the Registrant’s 2010 Plan. Pursuant to General Instruction E to Form S-8, the contents of the 2013 Registration Statement are incorporated into this Registration Statement by reference.

The Registrant also filed with the SEC its Registration Statement on Form S-8 (Registration No. 333-206268) on August 10, 2015 (the “2015 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 an additional 2,000,000 shares of Common Stock to be offered and sold under the Registrant’s 2010 Plan. Pursuant to General Instruction E to Form S-8, the contents of the 2015 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 6,000,000 additional shares of Common Stock to be offered and sold under the 2010 Plan. These shares represented 6,000,000 shares of Common Stock that were added to the 2010 Plan as of August 25, 2016 by vote of the Registrant’s stockholders at the Registrant’s 2016 Annual Meeting of 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.

## **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 SEC 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 fiscal year ended December 31, 2015 filed with the SEC on March 10, 2016 (File No. 001-12584);
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2016 filed with the SEC on May 5, 2016 (File No. 001-12584);
- Our Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 filed with the SEC on August 3, 2016 (File No. 001-12584);
- Our Current Reports on Form 8-K filed with the SEC on February 2, 2016, August 5, 2016 and August 26, 2016 (File No. 001-12584); and
- The description of our common stock set forth in our registration statement on Form 8-A12B, filed with the SEC on June 20, 2007 (File No. 000-12584).

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.**

Not Applicable

**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 Registrant 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, the Registrant's stockholders 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 the Registrant or any of its 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.**

<b><u>Exhibit No.</u></b>	<b><u>Description</u></b>
4.1	Synthetic Biologics, Inc. 2010 Incentive Stock Plan (as amended on May 31, 2016)*
5.1	Opinion of Parsons Behle & Latimer as to the legality of securities being registered*
23.1	Consent of BDO USA, LLP*
23.2	Consent of Parsons Behle & Latimer (included in Exhibit 5.1 hereof)*
24.1	Power of Attorney (included on the signature page of this registration statement)*

\*Filed Herewith

**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 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 31<sup>st</sup> day of August, 2016.

SYNTHETIC BIOLOGICS, INC.

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

By: /s/ Steven A. Shallcross  
Steven A. Shallcross  
Chief Financial Officer  
(Principal Financial and  
Accounting Officer)

Each of the undersigned, whose signature appears below, hereby severally constitute and appoint each of Jeffrey Riley and Steven A. Shallcross, with full power to each of them to act alone, as our true and lawful attorneys-in-fact and agent, with full power of substitution and resubstitution to each of said attorneys to each to sign for us, and in our names in the capacities indicated below, to the registration statement, and any amendment, post-effective amendment, supplement or papers supplemental thereto, any subsequent registration statements pursuant to Rule 462 of the Securities Act of 1933, as amended, 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 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 any of them or their or his or her 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 below by the following persons in the capacities and on the date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Jeffrey Riley</u> Jeffrey Riley	Chief Executive Officer (Principal Executive Officer) and Director	August 31, 2016
<u>/s/ Steven A. Shallcross</u> Steven A. Shallcross	Chief Financial Officer (Principal Financial and Accounting Officer)	August 31, 2016
<u>/s/ Jeffrey J. Kraws</u> Jeffrey J. Kraws	Chairman of the Board	August 31, 2016
<u>/s/ Scott L. Tarriff</u> Scott L. Tarriff	Director	August 31, 2016
<u>/s/ Jeffrey Wolf</u> Jeffrey Wolf	Director	August 31, 2016



**EXHIBIT INDEX**

<b><u>Exhibit No.</u></b>	<b><u>Description</u></b>
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23.1	Consent of BDO USA, LLP*
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24.1	Power of Attorney (included on the signature page of this registration statement)*

\*Filed Herewith

**SYNTHETIC BIOLOGICS, INC.**  
**(FORMERLY KNOWN AS ADEONA PHARMACEUTICALS, INC.)**  
**2010 STOCK INCENTIVE PLAN**  
**(as amended on May 31, 2016)**

**ARTICLE I**  
**GENERAL**

**1.1 Purpose**

The purpose of the Synthetic Biologics, Inc. (formerly known as Adeona Pharmaceuticals, Inc.) 2010 Stock Incentive Plan (the “Plan”) is to provide an incentive for the employees, directors, and consultants to Synthetic Biologics, Inc. (formerly known as Adeona Pharmaceuticals, Inc.) (the “Company”) and its subsidiaries an incentive (a) to enter into and remain in the service of the Company; (b) to enhance the long-term performance of the Company; and (c) to acquire a proprietary interest in the success of the Company.

**1.2 Administration**

1.2.1 The Plan shall be administered by the Compensation Committee (the “Committee”) of the board of directors of the Company (the “Board”), which shall consist of not less than two directors. The members of the Committee shall be appointed by, and serve at the pleasure of, the Board. To the extent required for transactions under the Plan to qualify for the exemptions available under Rule 16b-3 (“Rule 16b-3”) promulgated under the Securities Exchange Act of 1934 (the “1934 Act”), all actions relating to awards to persons subject to Section 16 of the 1934 Act shall be taken by the Board unless each person who serves on the Committee is a “non-employee director” within the meaning of Rule 16b-3 or such actions are taken by a sub-committee of the Committee (or the Board) comprised solely of “non-employee directors”. To the extent required for compensation realized from awards under the Plan to be deductible by the Company pursuant to section 162(m) of the Internal Revenue Code of 1986 (the “Code”), the members of the Committee shall be “outside directors” within the meaning of section 162(m).

1.2.2 The Committee shall have the authority (a) to exercise all of the powers granted to it under the Plan; (b) to construe, interpret and implement the Plan and any Plan Agreements executed pursuant to Section 2.1; (c) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules governing its own operations; (d) to make all determinations necessary or advisable in administering the Plan; (e) to correct any defect, supply any omission and reconcile any inconsistency in the Plan; (f) to amend the Plan to reflect changes in applicable law; (g) to determine whether, to what extent and under what circumstances awards may be settled or exercised in cash, shares of the Company’s common stock, par value \$.001 (the “Common Stock”), other securities, other awards or other property, or canceled, forfeited or suspended and the method or methods by which awards may be settled, canceled, forfeited or suspended; and (h) to determine whether, to what extent and under what circumstances cash, shares of the Common Stock, other securities, other awards or other property and other amounts payable with respect to an award shall be deferred either automatically or at the election of the holder thereof or of the Committee.

1.2.3 Actions of the Committee shall be taken by the vote of a majority of its members. Any action may be taken by a written instrument signed by a majority of the Committee members, and action so taken shall be fully as effective as if it had been taken by a vote at a meeting.

1.2.4 The determination of the Committee on all matters relating to the Plan or any Plan Agreement shall be final, binding and conclusive.

1.2.5 No member of the Committee shall be liable for any action or determination made in good faith with respect to the Plan or any award thereunder.

1.2.6 Notwithstanding anything to the contrary contained herein: (a) until the Board shall appoint the members of the Committee, the Plan shall be administered by the Board; and (b) the Board may, in its sole discretion, at any time and from time to time, grant awards or resolve to administer the Plan. In either of the foregoing events, the Board shall have all of the authority and responsibility granted to the Committee herein.

**1.3 Persons Eligible for Awards**

Awards under the Plan may be made to such directors, officers and other employees of the Company and its subsidiaries (including prospective employees conditioned on their becoming employees), and to such consultants to the Company and its subsidiaries (collectively, “key persons”) as the Committee shall in its discretion select.

**1.4 Types of Awards Under the Plan**

Awards may be made under the Plan in the form of: (a) incentive stock options (within the meaning of section 422 of the Code); (b) nonqualified stock options; (c) stock appreciation rights; (d) restricted stock; (e) restricted stock units; and (f) other stock-based awards, all as more fully set forth in Article II. The term “award” means any of the foregoing. No incentive stock option may be granted to a person who is not an employee of the Company on the date of grant.

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## **1.5 Shares Available for Awards**

1.5.1 The total number of shares of the Common Stock which may be transferred pursuant to awards granted under the Plan shall not exceed 14,000,000. The 14,000,000 shares referred to in the immediately preceding sentence include 3,000,000 shares of common stock initially included in the Plan when the Plan was adopted on September 27, 2010, 3,000,000 shares added to the Plan as of September 17, 2013, 2,000,000 shares added to the Plan as of May 15, 2015 and 6,000,000 shares added to the plan as of May 31, 2016. Such shares may be authorized but unissued shares of the Common Stock or authorized and issued shares of the Common Stock held in the Company's treasury or acquired by the Company for the purposes of the Plan. The Committee may direct that any stock certificate evidencing shares issued pursuant to the Plan shall bear a legend setting forth such restrictions on transferability as may apply to such shares pursuant to the Plan. If, after the effective date of the Plan, any award is forfeited or any award otherwise terminates or is cancelled without the delivery of shares of Stock, then the shares covered by such award or to which such award relates shall again become available for transfer pursuant to awards granted or to be granted under this Plan. Any shares of Stock delivered by the Company, any shares of Stock with respect to which awards are made by the Company and any shares of Stock with respect to which the Company becomes obligated to make awards, through the assumption of, or in substitution for, outstanding awards previously granted by an acquired entity, shall not be counted against the shares available for awards under this Plan.

1.5.2 Upon certain changes in Stock, the number of shares of Stock available for issuance with respect to awards under the Plan, as set forth in Sections 1.5.1 and 1.5.2, shall be adjusted pursuant to Section 3.7.1.

1.5.3 Except as provided in this Section 1.5 and in Section 2.3.7, there shall be no limit on the number or the value of the shares of Stock that may be subject to awards to any individual under the Plan.

## **1.6 Definitions of Certain Terms**

1.6.1 The "Fair Market Value" of a share of Stock on any day shall be determined as follows.

(a) If the principal market for the Stock (the "Market") is a national securities exchange, the last sale price or, if no reported sales take place on the applicable date, the average of the high bid and low asked price of Stock as reported for such Market on such date or, if no such quotation is made on such date, on the next preceding day on which there were quotations, provided that such quotations shall have been made within the ten (10) business days preceding the applicable date;

(b) If the Market is the Over the Counter Bulletin Board or another market, the average of the high bid and low asked price for Stock on the applicable date, or, if no such quotations shall have been made on such date, on the next preceding day on which there were quotations, provided that such quotations shall have been made within the ten (10) business days preceding the applicable date; or

(c) In the event that neither paragraph (a) nor (b) shall apply, the Fair Market Value of a share of Stock on any day shall be determined in good faith by the Committee.

1.6.2 The term "incentive stock option" means an option that is intended to qualify for special federal income tax treatment pursuant to sections 421 and 422 of the Code, as now constituted or subsequently amended, or pursuant to a successor provision of the Code, and which is so designated in the applicable Plan Agreement. Any option that is not specifically designated as an incentive stock option shall under no circumstances be considered an incentive stock option. Any option that is not an incentive stock option is referred to herein as a "nonqualified stock option."

1.6.3 The term "employment" means, in the case of a grantee of an award under the Plan who is not an employee of the Company, the grantee's association with the Company or a subsidiary as a director, consultant or otherwise.

1.6.4 A grantee shall be deemed to have a "termination of employment" upon ceasing to be employed by the Company and all of its subsidiaries or by a corporation assuming awards in a transaction to which section 424(a) of the Code applies. The Committee may in its discretion determine (a) whether any leave of absence constitutes a termination of employment for purposes of the Plan, (b) the impact, if any, of any such leave of absence on awards theretofore made under the Plan, and (c) when a change in a non-employee's association with the Company constitutes a termination of employment for purposes of the Plan. The Committee shall have the right to determine whether the termination of a grantee's employment is a dismissal for cause and the date of termination in such case, which date the Committee may retroactively deem to be the date of the action that is cause for dismissal. Such determinations of the Committee shall be final, binding and conclusive.

1.6.5 The term "cause," when used in connection with termination of a grantee's employment, shall have the meaning set forth in any then-effective employment agreement between the grantee and the Company or a subsidiary thereof. In the absence, of or in addition to, as the case may be, such an employment agreement provision, "cause" means: (a) conviction of any crime (whether or not involving the Company) constituting a felony in the jurisdiction involved; (b) engaging in any substantiated act involving moral turpitude; (c) engaging in any act which, in each case, subjects, or if generally known would subject, the Company to public ridicule or embarrassment; (d) material violation of the Company's policies, including, without limitation, those relating to sexual harassment or the disclosure or misuse of confidential information; (e) serious neglect or misconduct in the performance of the grantee's duties for the Company or a subsidiary or willful or repeated failure or refusal to perform such duties; in each case as determined by the Committee, which determination shall be final, binding and conclusive.

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**ARTICLE II**  
**AWARDS UNDER THE PLAN**

**2.1 Agreements Evidencing Awards**

Each award granted under the Plan shall be evidenced by a written agreement (“Plan Agreement”) which shall contain such provisions as the Committee in its discretion deems necessary or desirable. Such provisions may include, without limitation, a requirement that the grantee become a party to a stockholders’ agreement with respect to any shares of Stock acquired pursuant to the award, a requirement that the grantee acknowledge that such shares are acquired for investment purposes only, and a right of first refusal exercisable by the Company in the event that the grantee wishes to transfer any such shares. The Committee may grant awards in tandem with or in substitution for any other award or awards granted under this Plan or any award granted under any other plan of the Company or any subsidiary. Payments or transfers to be made by the Company or any subsidiary upon the grant, exercise or payment of an award may be made in such form as the Committee shall determine, including cash, shares of Stock, other securities, other awards or other property and may be made in a single payment or transfer, in installments or on a deferred basis, in each case in accordance with rules established by the Committee. By accepting an award pursuant to the Plan, a grantee thereby agrees that the award shall be subject to all of the terms and provisions of the Plan and the applicable Plan Agreement.

**2.2 No Rights as a Stockholder**

No grantee of an option or stock appreciation right (or other person having the right to exercise such award) shall have any of the rights of a stockholder of the Company with respect to shares subject to such award until the issuance of a stock certificate to such person for such shares.

**2.3 Grant of Stock Options and Stock Appreciation Rights**

2.3.1 The Committee may grant incentive stock options and nonqualified stock options (collectively, “options”) to purchase shares of the Common Stock from the Company, to such key persons, in such amounts and subject to such terms and conditions, as the Committee shall determine in its discretion, subject to the provisions of the Plan.

2.3.2 The Committee may grant stock appreciation rights to such key persons, in such amounts and subject to such terms and conditions, as the Committee shall determine in its discretion, subject to the provisions of the Plan. Stock appreciation rights may be granted in connection with all or any part of, or independently of, any option granted under the Plan. A stock appreciation right granted in connection with a nonqualified stock option may be granted at or after the time of grant of such option. A stock appreciation right granted in connection with an incentive stock option may be granted only at the time of grant of such option.

2.3.3 The grantee of a stock appreciation right shall have the right, subject to the terms of the Plan and the applicable Plan Agreement, to receive from the Company an amount equal to (a) the excess of the Fair Market Value of a share of the Common Stock on the date of exercise of the stock appreciation right over (b) the exercise price of such right as set forth in the Plan Agreement (or over the option exercise price if the stock appreciation right is granted in connection with an option), multiplied by (c) the number of shares with respect to which the stock appreciation right is exercised. Payment upon exercise of a stock appreciation right shall be in cash or in shares of the Common Stock (valued at their Fair Market Value on the date of exercise of the stock appreciation right) or both, all as the Committee shall determine in its discretion. Upon the exercise of a stock appreciation right granted in connection with an option, the number of shares subject to the option shall be correspondingly reduced by the number of shares with respect to which the stock appreciation right is exercised. Upon the exercise of an option in connection with which a stock appreciation right has been granted, the number of shares subject to the stock appreciation right shall be correspondingly reduced by the number of shares with respect to which the option is exercised.

2.3.4 Each Plan Agreement with respect to an option shall set forth the amount (the “option exercise price”) payable by the grantee to the Company upon exercise of the option evidenced thereby. The option exercise price per share shall be determined by the Committee in its discretion; provided, however, that the option exercise price of an incentive stock option shall be at least 100% of the Fair Market Value of a share of the Common Stock on the date the option is granted, and provided further that in no event shall the option exercise price be less than the par value of a share of the Common Stock.

2.3.5 Each Plan Agreement with respect to an option or stock appreciation right shall set forth the periods during which the award evidenced thereby shall be exercisable, whether in whole or in part. Such periods shall be determined by the Committee in its discretion; provided, however, that no incentive stock option (or a stock appreciation right granted in connection with an incentive stock option) shall be exercisable more than 10 years after the date of grant.

2.3.6 The Committee may in its discretion include in any Plan Agreement with respect to an option (the “original option”) a provision that an additional option (the “additional option”) shall be granted to any grantee who, pursuant to Section 2.4.3(b), delivers shares of the Common Stock in partial or full payment of the exercise price of the original option. The additional option shall be for a number of shares of the Common Stock equal to the number thus delivered, shall have an exercise price equal to the Fair Market Value of a share of the Common Stock on the date of exercise of the original option, and shall have an expiration date no later than the expiration date of the original option. In the event that a Plan Agreement provides for the grant of an additional option, such Agreement shall also provide that the exercise price of the original option be no less than the Fair Market Value of a share of Stock on its date of grant, and that any shares that are delivered pursuant to Section 2.4.3(b) in payment of such exercise price shall have been held for at least six months.

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2.3.7 To the extent that the aggregate Fair Market Value (determined as of the time the option is granted) of the stock with respect to which incentive stock options granted under this Plan and all other plans of the Company and any subsidiary are first exercisable by any employee during any calendar year shall exceed the maximum limit (currently, \$100,000), if any, imposed from time to time under section 422 of the Code, such options shall be treated as nonqualified stock options.

2.3.8 Notwithstanding the provisions of Sections 2.3.4 and 2.3.5, to the extent required under section 422 of the Code, an incentive stock option may not be granted under the Plan to an individual who, at the time the option is granted, owns stock possessing more than 10% of the total combined voting power of all classes of stock of his employer corporation or of its parent or subsidiary corporations (as such ownership may be determined for purposes of section 422(b)(6) of the Code) unless (a) at the time such incentive stock option is granted the option exercise price is at least 110% of the Fair Market Value of the shares subject thereto and (b) the incentive stock option by its terms is not exercisable after the expiration of 5 years from the date it is granted.

## **2.4 Exercise of Options and Stock Appreciation Rights**

Subject to the provisions of this Article II, each option or stock appreciation right granted under the Plan shall be exercisable as follows:

2.4.1 Unless the applicable Plan Agreement otherwise provides, an option or stock appreciation right may be exercised from time to time as to all or part of the shares as to which such award is then exercisable (but, in any event, only for whole shares). A stock appreciation right granted in connection with an option may be exercised at any time when, and to the same extent that, the related option may be exercised. An option or stock appreciation right shall be exercised by the filing of a written notice with the Company, on such form and in such manner as the Committee shall prescribe.

2.4.2 Any written notice of exercise of an option shall be accompanied by payment for the shares being purchased. Such payment shall be made: (a) by certified or official bank check (or the equivalent thereof acceptable to the Company) for the full option exercise price; or (b) unless the applicable Plan Agreement provides otherwise, by delivery of shares of the Common Stock (which, if acquired pursuant to exercise of a stock option, were acquired at least six months prior to the option exercise date) and having a Fair Market Value (determined as of the exercise date) equal to all or part of the option exercise price and a certified or official bank check (or the equivalent thereof acceptable to the Company) for any remaining portion of the full option exercise price; or (c) at the discretion of the Committee and to the extent permitted by law, by such other provision as the Committee may from time to time prescribe.

2.4.3 Promptly after receiving payment of the full option exercise price, or after receiving notice of the exercise of a stock appreciation right for which payment will be made partly or entirely in shares, the Company shall, subject to the provisions of Section 3.3 (relating to certain restrictions), deliver to the grantee or to such other person as may then have the right to exercise the award, a certificate or certificates for the shares of the Common Stock for which the award has been exercised. If the method of payment employed upon option exercise so requires, and if applicable law permits, an optionee may direct the Company to deliver the certificate(s) to the optionee's stockbroker.

## **2.5 Termination of Employment; Death**

2.5.1 Except to the extent otherwise provided in Section 2.5.2 or 2.5.3 or in the applicable Plan Agreement, all options and stock appreciation rights not theretofore exercised shall terminate upon termination of the grantee's employment for any reason (including death).

2.5.2 If a grantee's employment terminates for any reason other than death or dismissal for cause, the grantee may exercise any outstanding option or stock appreciation right on the following terms and conditions: (a) exercise may be made only to the extent that the grantee was entitled to exercise the award on the date of employment termination; and (b) exercise must occur within 90 days after employment terminates, except that this 90 day period shall be increased to one year if the termination is by reason of disability, but in no event after the expiration date of the award as set forth in the Plan Agreement. In the case of an incentive stock option, the term "disability" for purposes of the preceding sentence shall have the meaning given to it by section 422(c)(6) of the Code.

2.5.3 If a grantee dies while employed by the Company or any subsidiary, or after employment termination but during the period in which the grantee's awards are exercisable pursuant to Section 2.5.2, any outstanding option or stock appreciation right shall be exercisable on the following terms and conditions: (a) exercise may be made only to the extent that the grantee was entitled to exercise the award on the date of death; and (b) exercise must occur by the earlier of the first anniversary of the grantee's death or the expiration date of the award. Any such exercise of an award following a grantee's death shall be made only by the grantee's executor or administrator, unless the grantee's will specifically disposes of such award, in which case such exercise shall be made only by the recipient of such specific disposition. If a grantee's personal representative or the recipient of a specific disposition under the grantee's will shall be entitled to exercise any award pursuant to the preceding sentence, such representative or recipient shall be bound by all the terms and conditions of the Plan and the applicable Plan Agreement which would have applied to the grantee including, without limitation, the provisions of Sections 3.3 and 3.7 hereof.

## **2.6 Grant of Restricted Stock**

2.6.1 The Committee may grant restricted shares of Stock to such key persons, in such amounts, and subject to such terms and conditions as the Committee shall determine in its discretion, subject to the provisions of the Plan. Restricted stock awards may be made independently of or in connection with any other award under the Plan. A grantee of a restricted stock award shall have no rights with respect to such award unless such grantee accepts the award within such period as the Committee shall specify by executing a Plan Agreement in such form as the Committee shall determine and, if the Committee shall so require, makes payment to the Company by certified or official bank check (or the equivalent thereof acceptable to the Company) in such amount as the Committee may determine.

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2.6.2 Promptly after a grantee accepts a restricted stock award, the Company shall issue in the grantee's name a certificate or certificates for the shares of the Common Stock covered by the award. Upon the issuance of such certificate(s), the grantee shall have the rights of a stockholder with respect to the restricted stock, subject to the nontransferability restrictions and Company repurchase rights described in Sections 2.6.4 and 2.6.5 and to such other restrictions and conditions as the Committee in its discretion may include in the applicable Plan Agreement.

2.6.3 Unless the Committee shall otherwise determine, any certificate issued evidencing shares of restricted stock shall remain in the possession of the Company until such shares are free of any restrictions specified in the applicable Plan Agreement.

2.6.4 Shares of restricted stock may not be sold, assigned, transferred, pledged or otherwise encumbered or disposed of except as specifically provided in this Plan or the applicable Plan Agreement. The Committee at the time of grant shall specify the date or dates (which may depend upon or be related to the attainment of performance goals and other conditions) on which the nontransferability of the restricted stock shall lapse. Unless the applicable Plan Agreement provides otherwise, additional shares of Stock or other property distributed to the grantee in respect of shares of restricted stock, as dividends or otherwise, shall be subject to the same restrictions applicable to such restricted stock.

2.6.5 During the 120 days following termination of the grantee's employment for any reason, the Company shall have the right to require the return of any shares to which restrictions on transferability apply, in exchange for which the Company shall repay to the grantee (or the grantee's estate) any amount paid by the grantee for such shares.

## **2.7 Grant of Restricted Stock Units**

2.7.1 The Committee may grant awards of restricted stock units to such key persons, in such amounts, and subject to such terms and conditions as the Committee shall determine in its discretion, subject to the provisions of the Plan. Restricted stock units may be awarded independently of or in connection with any other award under the Plan.

2.7.2 At the time of grant, the Committee shall specify the date or dates on which the restricted stock units shall become fully vested and nonforfeitable, and may specify such conditions to vesting as it deems appropriate. In the event of the termination of the grantee's employment by the Company and its subsidiaries for any reason, restricted stock units that have not become nonforfeitable shall be forfeited and cancelled. The Committee at any time may accelerate vesting dates and otherwise waive or amend any conditions of an award of restricted stock units.

2.7.3 At the time of grant, the Committee shall specify the maturity date applicable to each grant of restricted stock units, which may be determined at the election of the grantee. Such date may be later than the vesting date or dates of the award. On the maturity date, the Company shall transfer to the grantee one unrestricted, fully transferable share of the Common Stock for each restricted stock unit scheduled to be paid out on such date and not previously forfeited. The Committee shall specify the purchase price, if any, to be paid by the grantee to the Company for such shares of the Common Stock.

## **2.8 Other Stock-Based Awards**

The Committee may grant other types of stock-based awards (including the grant of unrestricted shares) to such key persons, in such amounts and subject to such terms and conditions, as the Committee shall in its discretion determine, subject to the provisions of the Plan. Such awards may entail the transfer of actual shares of the Common Stock to Plan participants, or payment in cash or otherwise of amounts based on the value of shares of the Common Stock.

## **ARTICLE III MISCELLANEOUS**

### **3.1 Amendment of the Plan; Modification of Awards**

3.1.1 The Board may from time to time suspend, discontinue, revise or amend the Plan in any respect whatsoever, except that no such amendment shall materially impair any rights or materially increase any obligations under any award theretofore made under the Plan without the consent of the grantee (or, after the grantee's death, the person having the right to exercise the award). For purposes of this Section 3.1, any action of the Board or the Committee that alters or affects the tax treatment of any award shall not be considered to materially impair any rights of any grantee.

3.1.2 Stockholder approval of any amendment shall be obtained to the extent necessary to comply with section 422 of the Code (relating to incentive stock options) or other applicable law or regulation.

3.1.3 The Committee may amend any outstanding Plan Agreement, including, without limitation, by amendment which would accelerate the time or times at which the award becomes unrestricted or may be exercised, or waive or amend any goals, restrictions or conditions set forth in the Agreement. However, any such amendment (other than an amendment pursuant to Section 3.7.2, relating to change in control) that materially impairs the rights or materially increases the obligations of a grantee under an outstanding award shall be made only with the consent of the grantee (or, upon the grantee's death, the person having the right to exercise the award).

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### **3.2 Tax Withholding**

3.2.1 As a condition to the receipt of any shares of the Common Stock pursuant to any award or the lifting of restrictions on any award, or in connection with any other event that gives rise to a federal or other governmental tax withholding obligation on the part of the Company relating to an award (including, without limitation, FICA tax), the Company shall be entitled to require that the grantee remit to the Company an amount sufficient in the opinion of the Company to satisfy such withholding obligation.

3.2.2 If the event giving rise to the withholding obligation is a transfer of shares of the Common Stock, then, unless otherwise specified in the applicable Plan Agreement, the grantee may satisfy the withholding obligation imposed under Section 3.2.1 by electing to have the Company withhold shares of the Common Stock having a Fair Market Value equal to the amount of tax to be withheld. For this purpose, Fair Market Value shall be determined as of the date on which the amount of tax to be withheld is determined (and any fractional share amount shall be settled in cash).

### **3.3 Restrictions**

3.3.1 If the Committee shall at any time determine that any consent (as hereinafter defined) is necessary or desirable as a condition of, or in connection with, the granting of any award under the Plan, the issuance or purchase of shares or other rights thereunder, or the taking of any other action thereunder (each such action being hereinafter referred to as a “plan action”), then such plan action shall not be taken, in whole or in part, unless and until such consent shall have been effected or obtained to the full satisfaction of the Committee.

3.3.2 The term “consent” as used herein with respect to any plan action means (a) any and all listings, registrations or qualifications in respect thereof upon any securities exchange or under any federal, state or local law, rule or regulation, (b) any and all written agreements and representations by the grantee with respect to the disposition of shares, or with respect to any other matter, which the Committee shall deem necessary or desirable to comply with the terms of any such listing, registration or qualification or to obtain an exemption from the requirement that any such listing, qualification or registration be made and (c) any and all consents, clearances and approvals in respect of a plan action by any governmental or other regulatory bodies.

### **3.4 Non-assignability**

Except to the extent otherwise provided in the applicable Plan Agreement, no award or right granted to any person under the Plan shall be assignable or transferable other than by will or by the laws of descent and distribution, and all such awards and rights shall be exercisable during the life of the grantee only by the grantee or the grantee’s legal representative.

### **3.5 Notification of Election Under Code Section 83(b)**

If any grantee shall, in connection with the acquisition of shares of the Common Stock under the Plan, make the election permitted under section 83(b) of the Code (that is, an election to include in gross income in the year of transfer the amounts specified in section 83(b)), such grantee shall notify the Company of such election within 10 days of filing notice of the election with the Internal Revenue Service, in addition to any filing and notification required pursuant to regulations issued under the authority of Code section 83(b).

### **3.6 Notification Upon Disqualifying Disposition**

If any grantee shall make any disposition of shares of the Common Stock issued pursuant to the exercise of an incentive stock option under the circumstances described in section 421(b) of the Code (relating to certain disqualifying dispositions), such grantee shall notify the Company of such disposition within 10 days thereof.

### **3.7 Adjustment Upon Changes in Stock**

3.7.1 Shares Available for Grants. In the event of any change in the number of shares of Stock outstanding by reason of any stock dividend or split, reverse stock split, recapitalization, merger, consolidation, combination or exchange of shares or similar corporate change, the maximum number of shares of the Common Stock with respect to which the Committee may grant awards under Article II hereof, as described in Section 1.5.1, and the individual annual limit described in Section 1.5.2, shall be appropriately adjusted by the Committee. In the event of any change in the number of shares of the Common Stock outstanding by reason of any other event or transaction, the Committee may, but need not, make such adjustments in the number and class of shares of the Common Stock with respect to which awards: (i) may be granted under Article II hereof and (ii) granted to any one employee of the Company or a subsidiary during any one calendar year, in each case as the Committee may deem appropriate, unless such adjustment would cause any award that would otherwise qualify as performance based compensation with respect to a “162(m) covered employee” (as defined in Section 162 of the Code), to cease to so qualify.

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3.7.2 Outstanding Restricted Stock and Restricted Stock Units. Unless the Committee in its absolute discretion otherwise determines, any securities or other property (including dividends paid in cash) received by a grantee with respect to a share of restricted stock, the issue date with respect to which occurs prior to such event, but which has not vested as of the date of such event, as a result of any dividend, stock split, reverse stock split, recapitalization, merger, consolidation, combination, exchange of shares or otherwise will not vest until such share of restricted stock vests, and shall be promptly deposited with the Company or otherwise treated as was the certificate for the underlying share of restricted stock, pursuant to Section 2.6.3 hereof.

The Committee may, in its absolute discretion, adjust any grant of shares of restricted stock, the issue date with respect to which has not occurred as of the date of the occurrence of any of the following events, or any grant of restricted stock units, to reflect any dividend, stock split, reverse stock split, recapitalization, merger, consolidation, combination, exchange of shares or similar corporate change as the Committee may deem appropriate to prevent the enlargement or dilution of rights of grantees.

3.7.3 Outstanding Options and Stock Appreciation Rights — Increase or Decrease in Issued Shares Without Consideration. Subject to any required action by the stockholders of the Company, in the event of any increase or decrease in the number of issued shares of Stock resulting from a subdivision or consolidation of shares of Stock or the payment of a stock dividend (but only on the shares of Stock), or any other increase or decrease in the number of such shares effected without receipt of consideration by the Company, the Committee shall proportionally adjust the number of shares of the Common Stock subject to each outstanding option and stock appreciation right, and the exercise price-per-share of the Common Stock of each such option and stock appreciation right.

3.7.4 Outstanding Options and Stock Appreciation Rights — Certain Mergers. Subject to any required action by the stockholders of the Company, in the event that the Company shall be the surviving corporation in any merger or consolidation (except a merger or consolidation as a result of which the holders of shares of Stock receive securities of another corporation), each option and stock appreciation right outstanding on the date of such merger or consolidation shall pertain to and apply to the securities which a holder of the number of shares of the Common Stock subject to such option or stock appreciation right would have received in such merger or consolidation.

3.7.5 Outstanding Options and Stock Appreciation Rights — Certain Other Transactions. In the event of (i) a dissolution or liquidation of the Company, (ii) a sale of all or substantially all of the Company's assets, (iii) a merger or consolidation involving the Company in which the Company is not the surviving corporation or (iv) a merger or consolidation involving the Company in which the Company is the surviving corporation but the holders of shares of the Common Stock receive securities of another corporation and/or other property, including cash, the Committee shall, in its absolute discretion, have the power to:

- (i) cancel, effective immediately prior to the occurrence of such event, each option and stock appreciation right outstanding immediately prior to such event (whether or not then exercisable), and, in full consideration of such cancellation, pay to the grantee to whom such option or stock appreciation right was granted an amount in cash, for each share of the Common Stock subject to such option or stock appreciation right, respectively, equal to the excess of (x) the value, as determined by the Committee in its absolute discretion, of the property (including cash) received by the holder of a share of the Common Stock as a result of such event over (y) the exercise price of such option or stock appreciation right;
- (ii) cancel, effective immediately prior to the occurrence of such event, each option and stock appreciation right outstanding immediately prior to such event (whether or not then exercisable), and, in full consideration of such cancellation, pay to the grantee to whom such option or stock appreciation right was granted, for each share of the Common Stock subject to such option or stock appreciation right, respectively, the property (including cash) received by the holder of a share of the Common Stock as a result of such event; or
- (iii) provide for the exchange of each option and stock appreciation right outstanding immediately prior to such event (whether or not then exercisable) for an option or stock appreciation right with respect to, as appropriate, some or all of the property which a holder of the number of shares of the Common Stock subject to such option or stock appreciation right would have received and, incident thereto, make an equitable adjustment as determined by the Committee in its absolute discretion in the exercise price of the option or stock appreciation right, or the number of shares or amount of property subject to the option or stock appreciation right or, if appropriate, provide for a cash payment to the grantee to whom such option or stock appreciation right was granted in partial consideration for the exchange of the option or stock appreciation right.

3.7.6 Outstanding Options and Stock Appreciation Rights — Other Changes. In the event of any change in the capitalization of the Company or a corporate change other than those specifically referred to in Sections 3.7.3, 3.7.4 or 3.7.5 hereof, the Committee may, in its absolute discretion, make such adjustments in the number and class of shares subject to options and stock appreciation rights outstanding on the date on which such change occurs and in the per-share exercise price of each such option and stock appreciation right as the Committee may consider appropriate to prevent dilution or enlargement of rights. In addition, if and to the extent the Committee determines it is appropriate, the Committee may elect to cancel each option and stock appreciation right outstanding immediately prior to such event (whether or not then exercisable), and, in full consideration of such cancellation, pay to the grantee to whom such option or stock appreciation right was granted an amount in cash, for each share of the Common Stock subject to such option or stock appreciation right, respectively, equal to the excess of (i) the Fair Market Value of the Common Stock on the date of such cancellation over (ii) the exercise price of such option or stock appreciation right.

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3.7.7 No Other Rights. Except as expressly provided in the Plan, no grantee shall have any rights by reason of any subdivision or consolidation of shares of stock of any class, the payment of any dividend, any increase or decrease in the number of shares of stock of any class or any dissolution, liquidation, merger or consolidation of the Company or any other corporation. Except as expressly provided in the Plan, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number of shares of the Common Stock subject to an award or the exercise price of any option or stock appreciation right. Except as otherwise provided in Section 3.7, no adjustment shall be made for dividends, distributions or other rights (whether ordinary or extraordinary, and whether in cash, securities or other property) for which the record date is prior to the date such stock certificate is issued.

### **3.8 Right of Discharge Reserved**

Nothing in the Plan or in any Plan Agreement shall confer upon any grantee the right to continue in the employ of the Company or affect any right which the Company may have to terminate such employment.

### **3.9 Nature of Payments**

3.9.1 Any and all grants of awards and issuances of shares of the Common Stock under the Plan shall be in consideration of services performed for the Company by the grantee.

3.9.2 All such grants and issuances shall constitute a special incentive payment to the grantee and shall not be taken into account in computing the amount of salary or compensation of the grantee for the purpose of determining any benefits under any pension, retirement, profit-sharing, bonus, life insurance or other benefit plan of the Company or under any agreement between the Company and the grantee, unless such plan or agreement specifically provides otherwise.

### **3.10 Non-Uniform Determinations**

The Committee's determinations under the Plan need not be uniform and may be made by it selectively among persons who receive, or are eligible to receive, awards under the Plan (whether or not such persons are similarly situated). Without limiting the generality of the foregoing, the Committee shall be entitled, among other things, to make non-uniform and selective determinations, and to enter into non-uniform and selective Plan agreements, as to (a) the persons to receive awards under the Plan, (b) the terms and provisions of awards under the Plan, and (c) the treatment of leaves of absence pursuant to Section 1.6.4.

### **3.11 Other Payments or Awards**

Nothing contained in the Plan shall be deemed in any way to limit or restrict the Company from making any award or payment to any person under any other plan, arrangement or understanding, whether now existing or hereafter in effect.

### **3.12 Section Headings**

The section headings contained herein are for the purpose of convenience only and are not intended to define or limit the contents of the sections.

### **3.13 Effective Date and Term of Plan**

3.13.1 The Plan was adopted by the Board on September 27, 2010, subject to approval by the Company's stockholders, which approval occurred on November 2, 2010. The Plan was amended on May 15, 2015, to increase the number of shares of the Common Stock that may be transferred pursuant to awards granted under the Plan by 2,000,000 to 8,000,000. The Plan was further amended on May 31, 2016, subject to approval by the Company's stockholders to increase the number of shares of the Common Stock that may be transferred pursuant to awards granted under the Plan by 6,000,000 to 14,000,000. All awards under the Plan prior to such stockholder approval (if any) are subject in their entirety to such approval. If such approval is not obtained prior to the first anniversary of the date of adoption of the Plan, the Plan and all awards thereunder shall terminate on that date.

3.13.2 Unless sooner terminated by the Board, the Plan will terminate on the close of business on September 27, 2020, ten years from the original effective date. All awards made under the Plan prior to its termination shall remain in effect until such awards have been satisfied or terminated in accordance with the terms and provisions of the Plan and the applicable Plan Agreements.

### **3.14 Governing Law**

All rights and obligations under the Plan shall be construed and interpreted in accordance with the laws of the State of Nevada, without giving effect to principles of conflict of laws.

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August 30, 2016

The Board of Directors  
Synthetic Biologics, Inc.  
155 Gibbs Street, Suite 412  
Rockville, MD 20850

Re: Synthetic Biologics, Inc. Form S-8

Gentlemen:

We refer to the Registration Statement on Form S-8 (the "Registration Statement") to be filed on even date by Synthetic Biologics, Inc., a Nevada corporation (the "Company"), with the Securities and Exchange Commission with respect to the registration of up to an aggregate of 6,000,000 shares of the Company's common stock, par value \$0.001 per share (the "Common Stock"), to be issued in connection with the Company's 2010 Stock Incentive Plan (the "Plan").

As counsel to the Company, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the Nevada Revised Statutes, and we express no opinion with respect to the applicability thereto, or the effect thereon, of the laws of any other jurisdiction or, in the case of Nevada, any other laws, or as to any matters of municipal law or the laws of any local agencies within any state.

We have made such examination as we have deemed necessary for the purpose of this opinion. Based upon such examination, it is our opinion, that, when the Registration Statement has become effective under the Securities Act of 1933, as amended, and when the shares of Common Stock to be issued are sold and paid for in the manner described in the Plan, the Common Stock so issued will be validly issued, fully paid and non-assessable.

This opinion is given as of the date hereof and we assume no obligation to advise you of changes that may hereafter be brought to our attention.

We hereby consent to the use of this opinion as an exhibit to the Registration Statement.

Very truly yours,

*/s/ Parsons Behle & Latimer*

PARSONS BEHLE & LATIMER

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Synthetic Biologics, Inc.  
Rockville, Maryland

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our reports dated March 10, 2016, relating to the consolidated financial statements and the effectiveness of Synthetic Biologics, Inc.'s internal control over financial reporting appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2015.

/s/ BDO USA, LLP

Troy, Michigan  
August 30, 2016

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