

Synthetic Biologics, Inc.  
Form 424B3  
November 14, 2012

**Filed Pursuant to Rule 424(b)(3)**

**Registration Statement No. 333-180562**

**November 14, 2012**

**PROSPECTUS SUPPLEMENT NO. 8**

**SYNTHETIC BIOLOGICS, INC.**

**112,573 Shares of Common Stock**

This prospectus supplement amends and supplements our prospectus, dated July 26, 2012 relating to the resale, from time to time, of up to 112,573 shares of common stock of Synthetic Biologics, Inc. upon the exercise of warrants issued in July 2011 at an exercise price of \$1.00 per share and warrants sold in our July 2010 offering at an exercise price of \$1.32 per share. We will receive proceeds if the warrants are exercised for cash; to the extent we receive such proceeds, they will be used for working capital purposes.

Our common stock became eligible for trading on the NYSE MKT October 16, 2008. Our common stock is eligible for quotation on the NYSE MKT under the symbol "SYN". The closing price of our stock on November 13, 2012 was \$2.20.

This prospectus supplement is being filed to include the information set forth in the Current Report on Form 8-K filed on November 13, 2012, which is set forth below. This prospectus supplement should be read in conjunction with the prospectus dated July 26, 2012, supplement no. 1 dated August 9, 2012, prospectus supplement no. 2 dated August 15, 2012, prospectus supplement no. 3 dated August 15, 2012, prospectus supplement no. 4 dated September 12, 2012, prospectus supplement no. 5 dated October 9, 2012, prospectus supplement no. 6 dated October 17, 2012, and

prospectus supplement no. 7 dated November 1, 2012 which are to be delivered with this prospectus supplement.

**Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 4 of the original prospectus for more information.**

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus or the prospectus to which it relates is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this Prospectus Supplement No. 8 is November 14, 2012.

**UNITED STATES**

**SECURITIES AND EXCHANGE COMMISSION**

**WASHINGTON, D.C. 20549**

**FORM 8-K**

**CURRENT REPORT**

**Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

Date of Report (date of earliest event reported): **November 8, 2012**

**Synthetic Biologics, Inc.**

(Exact name of registrant as specified in charter)

**Nevada**

(State or other jurisdiction of incorporation)

**01-12584**

**13-3808303**

(Commission File Number) (IRS Employer Identification No.)

**617 Detroit Street, Suite 100**

**Ann Arbor, MI 48104**

(Address of principal executive offices and zip code)

**(734) 332-7800**

(Registrant's telephone number including area code)

**N/A**

(Former Name and Former Address)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12(b) under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

**Item 1.01 Entry into a Material Definitive Agreement.**

On November 8, 2012, Synthetic Biologics, Inc. (the “Company”) entered into an Asset Purchase Agreement (the “Agreement”) with Prev ABR LLC (“Prev”), pursuant to which the Company has the right to acquire the *C. diff* program assets of Prev, including pre-Investigational New Drug (IND) package, Phase I and Phase II clinical data, manufacturing process data and all issued and pending U.S. and international patents. Pursuant to the Agreement, the Company paid Prev an initial cash payment of \$100,000 upon execution of the Agreement and subject to closing conditions anticipated to occur within 30 days, the Company will pay an additional payment \$135,000 in cash and 625,000 unregistered shares of the Company’s common stock to Prev. In addition, upon the achievement of the milestones set forth below, Prev may be entitled to receive additional consideration payable 50% in cash and 50% in stock of the Company, subject to Prev’s option to receive the entire payment in shares of the Company’s stock, with the exception of the first milestone payments to be paid in cash: (i) upon commencement of an IND; (ii) upon commencement of a Phase I clinical trial; (iii) upon commencement of a Phase II clinical trial; (iv) upon commencement of a Phase III clinical trial; (v) upon Biologic License Application (BLA) filing in the U.S. and for territories outside of the U.S. (as defined in the Agreement); and, (vi) upon BLA approval in the U.S. and upon approval in territories outside the-U.S. The Agreement and stock issuances are subject to prior approval of the NYSE MKT, LLC. The Agreement is subject to certain due diligence obligations and no royalties are payable to Prev under the Agreement.

The Agreement provides for termination prior to closing: (i) upon the mutual agreement of the parties; (ii) by Prev if the closing has not occurred within thirty (30) days of the execution of the Agreement; provided that such failure to close is not due to the failure of Prev to fulfill its obligations under the Agreement or Prev has not been the cause of such failure, or (iii) by the Company at any time. If the Agreement is terminated by the Company then the Company shall be entitled to receive a refund of half of its initial cash payment, in addition to any fees paid by the Company on behalf of Prev and if such termination is due to the failure of Prev to fulfill its obligations under the Agreement or a breach of a representation or warranty of Prev then the Company shall be entitled to a refund of the entire cash payment in addition to any fees paid by the Company on behalf of Prev.

The Agreement also provides that Prev has a right to the return to it of all assets acquired by the Company under the Agreement if on or prior to the date that is (i) thirty (30) months after the execution of the Agreement, the Company has not initiated toxicology studies in non-rodent models or (ii) thirty six (36) months have not filed an IND under the program related to the assets and such failure is not due to action or inaction of Prev or breach of its representations or warranties or covenants or if there is a change of control as defined in the Agreement and after such change of control the assets are not further developed; provided however that such thirty (30) and thirty six (36) month periods can be extended by the Company for an additional twelve (12) months upon payment of a cash milestone payment.

The foregoing description of the Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Agreement which is filed as Exhibit 10.1 to this Current Report on Form 8-K and incorporated herein by reference.

On November 12, 2012, the Company issued the press release attached hereto as Exhibit 99.1 regarding the Agreement described herein.

**Important Notice regarding the Agreement**

The Agreement has been included as an exhibit to this Current Report on Form 8-K to provide investors and security holders with information regarding its terms. It is not intended to provide any other financial information about the Company. The representations, warranties and covenants contained in the Agreement were made only for purposes of those agreements and as of specific dates; were solely for the benefit of the parties to the Agreement; may be subject to limitations agreed upon by the parties, including being qualified by disclosures made for the purposes of allocating contractual risk between the parties to the Agreement instead of establishing these matters as facts; and may be subject to standards of materiality applicable to the contracting parties that differ from those applicable to investors. Investors should not rely on the representations, warranties and covenants or any description thereof as characterizations of the actual state of facts or condition of the Company. Moreover, information concerning the subject matter of the representations, warranties and covenants may change after the date of the Agreement, which subsequent information may or may not be fully reflected in public disclosures by the Company.

**Item 9.01**

(d)

**Financial Statements and Exhibits.**

Exhibits

**Exhibit No. Description**

10.1 Asset Purchase Agreement between Synthetic Biologics, Inc. and Prev ABR LLC dated November 8, 2012\*\*

99.1 Press Release dated November 12, 2012.

\*\* Confidential treatment has been requested as to certain portions of this exhibit pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: November 13, 2012 SYNTHETIC  
BIOLOGICS, INC.  
(Registrant)

By: /s/ C. Evan Ballantyne  
Name: C. Evan Ballantyne  
Title: Chief Financial  
Officer



**INDEX OF EXHIBITS**

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10.1 Asset Purchase Agreement between Synthetic Biologics, Inc. and Prev ABR LLC dated November 8, 2012\*\*

99.1 Press Release dated November 12, 2012.

\*\* Confidential treatment has been requested as to certain portions of this exhibit pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

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## **ASSET PURCHASE AGREEMENT**

This Asset Purchase Agreement (the "Agreement") is made and entered into as of the 8<sup>th</sup> day of November, 2012 by and between SYNTHETIC BIOLOGICS, INC, a Nevada corporation having its principal place of business at 617 Detroit Street, Ann Arbor, Michigan 48104 ("Synthetic" or "Buyer"), and PREV ABR LLC, a Maryland limited liability company having its principal place of business at 7272 Wisconsin Avenue, Suite 300, Bethesda, Maryland 20814 ("Seller").

### **WITNESSETH:**

WHEREAS, Seller owns and desires to sell and assign to Buyer certain assets and related intellectual property (collectively, the "Assets") as specifically defined in Section 1.1 of this Agreement and Buyer desires to purchase and acquire such Assets from Seller and, thereafter, to use, market, license, sublicense, develop, maintain, collect and otherwise deal with the Assets without restriction.

NOW, THEREFORE, in consideration of the respective representations and warranties hereinafter set forth and of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

### **ARTICLE I**

#### **DEFINITIONS**

As used herein, the following terms shall have the following meanings:

1.1 "Assets" shall mean the Seller's CDAD program including any and all of the following assets of the Seller, including any and all rights and benefits constituting and relating to the Seller's -lactamase technology and all other biomedical or pharmaceutical technologies of the Seller and all -lactamase products detained and/or developed with the aforementioned technologies, including without limitation the lead P1A, P2A and P3A-based products in preclinical and clinical phases (the "Program") and all tangible and intangible intellectual property and know how exclusively related thereto including the following:

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(a) all methods and data sets , and all technical documentation pertaining to the Program, including any specifications, flow charts, diagrams, lab results and any and all notes, all inventor notebook pages specific to the Program, plans and other documentation describing problems, future directions or other matters exclusively related to the Program;

(b) (i) all patents, patent rights, copyrights, trademarks, trademark rights, tradenames, tradename rights and patent, copyright or trademark applications exclusively respecting the Program and related intellectual property; (ii) all reissues, reexaminations, extensions, continuations, continuations-in-part, continuing prosecution applications, requests for continuing examinations, divisions and registrations of any item in any of the foregoing categories; (iii) foreign counterparts of any of the foregoing; (iv) all patent and patent applications claiming any right of priority to or through the patent applications of the patents listed on Exhibit B hereto; (v) all rights to apply in all countries of the world for patents certificates of invention, utility models, industrial design protections, design patent protections, or other governmental grants or issuances of any type related to any item in any of the foregoing categories (i) through (v), including, without limitation, under the Paris Convention for the Protection of Industrial Property, the International Patent Cooperation Treaty, or any other convention, treaty, agreement, or understanding; (vi) all invention, invention disclosures and discoveries described in any of the patents listed on Exhibit B hereto that are included in any claim in such patents, and/or are subject matter capable of being reduced to a patent claim in a reissue or reexamination proceeding brought on any of the patents; (vii) all causes of action (whether known or unknown, or whether currently pending, filed or otherwise) and other enforcement rights under, or on account of, any of the patents and/or rights (as described on Exhibit B); (viii) all rights to collect royalties and other payments under or on account of the patents or any item in any categories (i) through (vii); (ix) all ideas, know-how, trade secrets, inventions, invention disclosures, discoveries, technology, designs and any other proprietary rights which Seller owns, in each case with respect to any of the above, pertaining exclusively to the Program (collectively, "Proprietary Rights"); and (x) a list of upcoming filings, all US Patent and Trademark Office and other patentability assessments;

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- (c) all cGMP and non-cGMP material and master cell banks of P1A, P2A and P3A and all other tangible assets related thereto;
- (d) any and all U.S. and international investigational new drug applications (IND) and pre-INDs of Seller;
- (e) information and know-how related to research, development, manufacture and/or business (commercial/marketing), used or held for use in connection with the Program;
- (f) any and all health and regulatory registrations, approvals and/or applications and related documentation for the Program;
- (g) any and all drugs, formulations and user devices, applications, and safety data;
- (h) all other information, documentation and goodwill relating to the Program;
- (i) all regulatory files (paper and electronic) or so-called regulatory files and records of communications and filings with any and all regulatory authorities in both paper and electronic form; and
- (j) the Assets shall be maintained by the Seller's office and warehouse located at Wisconsin Avenue, Bethesda, MD and working and master cell banks, cGMP and non-cGMP drug substance and drug product wherever located pending the Closing or until earlier relocated by operation of this Agreement. The Seller shall cooperate with and allow the Buyer to remove the Assets during normal business hours during such period.

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1.2 “Buyer” shall refer to Synthetic Biologics, Inc., however Synthetic Biologics, Inc shall have the right, in its sole discretion, to determine that the Assets shall be acquired by one of its wholly owned subsidiaries and in such case Buyer shall refer to such wholly owned subsidiary.

## ARTICLE II

### SALE AND PURCHASE OF ASSETS

2.1 Sale and Purchase. Subject to the terms and conditions contained herein, Seller hereby sells, transfers, assigns, conveys and delivers to Buyer, and Buyer hereby purchases and accepts from Seller, all of Seller's right, title and interest in and to the Assets, free and clear of any liens, pledges, security interests, claims or encumbrances of any kind, other than liens for taxes not yet due and payable. Upon the Closing, Buyer shall have the sole responsibility and authority to prosecute any pending patent application included in the Assets or related thereto.

2.2 Limitation on Assumption. Except for the Assumed Liabilities (as defined in Section 2.3 below), Buyer shall not assume, pay or discharge or in any respect be liable for any liability, obligation, commitment or expense of Seller arising in connection with the Assets or otherwise. The liabilities for which Buyer shall not be liable include, without limitation, any liability (actual or contingent), loss, commitment, obligation or expense of Seller:

(a) incident to, or arising out of, the negotiation and preparation of, or performance under this Agreement by Seller, including, without limitation, costs incurred in connection with the assignment of the Assets;

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(b) incident to, or arising out of, any claims, actions, suits, proceedings, liabilities, fines, penalties, deficiencies or judgments existing on the date hereof or arising at any time thereafter as a result of or in connection with the conduct of the business of Seller, including, without limitation, the ownership or use of the Assets by Seller and Seller's conduct of its business up to and including the Closing Date;

(c) incident to, or arising out of, any tax liabilities (or penalties or interest thereon), domestic or foreign (including any which may arise as a result of the sale of the Assets as contemplated by this Agreement), of Seller on account of this Agreement or the operations of Seller up to and including the Closing Date; or

(d) incident to or arising out of any liability incurred prior to the date hereof with respect to the patents listed on Exhibit B hereto, including annuity, maintenance, extension, legal and other similar fees.

2.3 Assumption of Liabilities; Limitation on Seller's Liability. Buyer (or Synthetic and Buyer jointly and severally, if Buyer is a wholly owned subsidiary of Synthetic) shall assume, be responsible for and pay, perform and discharge when due all liabilities, obligations, commitments or expenses arising after the Closing from the ownership, possession and/or use of the Assets by Buyer, its affiliates, successors or assigns (collectively, the "Assumed Liabilities"). In addition, Buyer (or Synthetic and Buyer jointly and severally, if Buyer is a wholly owned subsidiary of Synthetic ) shall assume, be responsible for and pay, perform and discharge when due the following liabilities, obligations, commitments or expenses arising after the execution of this Agreement and prior to the Closing; provided, however that neither the Buyer nor any affiliate, parent or subsidiary thereof shall have no such obligation if this Agreement is terminated prior to Closing:

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(a) incident to, or arising out of, any claims, actions, suits, proceedings, liabilities, fines, penalties, deficiencies or judgments as a result of Buyer's conduct of its business or Buyer's ownership and use of the Assets after the execution of this Agreement;

(b) incident to, or arising out of, any tax liabilities (or penalties or interest thereon), domestic or foreign, of Buyer or the operations of Buyer or Buyer's ownership and use of the Assets after the Closing, specifically excluding any tax liabilities associated with the transactions contemplated by this Agreement; or

(c) incident to or arising out of any liability incurred after the date hereof with respect to the patents listed on Exhibit B hereto, including annuity, maintenance, extension, legal and other similar fees with respect to the filings in the jurisdictions set forth on Exhibit B.

To the extent Buyer is (or Synthetic and Buyer are, if Buyer is a wholly owned subsidiary of Synthetic) responsible for any such costs or expenses pursuant to this Section 2.3 and the expenses are advanced by the Seller between execution of this Agreement and Closing, at the Closing, Buyer (or Synthetic and Buyer, if Buyer is a wholly owned subsidiary of Synthetic ) and shall reimburse Seller for such costs and expenses, with such reimbursement being a condition to Seller's obligation to close. If Buyer does not close the transaction contemplated herein or the transaction is terminated, neither Buyer nor any affiliate, parent or subsidiary thereof shall have any obligation to Seller under this Section 2.3 and its only obligation to Seller shall be under Article XII of this Agreement.

2.4 Consideration. The consideration payable by Buyer (or Synthetic and Buyer, if Buyer is a wholly owned subsidiary of Synthetic) for the Assets to be sold to Buyer as provided herein shall be as follows:

(a) A cash payment payable by wire transfer of immediately available funds to an account designated by Seller in writing in the amount of Two Hundred Thirty Five Thousand Dollars (\$235,000) payable as follows: (i) One Hundred Thousand Dollars (\$100,000) payable on the date of the execution of this Agreement; and (ii) One Hundred Thirty Five Thousand Dollars (\$135,000) payable on the Closing Date.



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(b) On the Closing Date, Six Hundred Twenty Five Thousand (625,000) shares of Synthetic's common stock (the "Shares"), of which Two Hundred Fifty Thousand (250,000) Shares shall be issued to Seller and Three Hundred Seventy Five Thousand (375,000) shares shall be held in escrow by Gracin & Marlow, LLP, as escrow agent, for a period of 180 days in accordance with the terms of the Escrow Agreement annexed hereto as Exhibit C (the "Escrow Agreement"); and

(c) The fees set forth on Exhibit D annexed hereto upon the attainment of the milestones set forth on Exhibit D. Buyer and Seller shall promptly make such payments upon reaching such milestones.

2.5 Allocation of the Purchase Price. For tax purposes, the parties agree that all of the consideration for the Assets shall be allocated to the purchase of the Program and the other Assets in accordance with Section 1060 of the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder (and any similar provision of domestic or foreign law, as appropriate) as set forth on Exhibit E.

### ARTICLE III

#### CLOSING; CONDITIONS TO CLOSING; DELIVERIES

3.1 Closing. The closing of this transaction (the "Closing") shall be held on the date which is five days after all conditions to Closing set forth in Section 3.2 have been met, unless this Agreement has been earlier terminated in accordance with the provisions of Article XI (the "Closing Date") at such time and place upon which the parties shall agree.

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3.2 Conditions to Buyer's Obligation. Buyer's obligation hereunder to purchase and pay for the Assets is subject to the satisfaction, on or before the Closing, of the following conditions, any of which may be waived, in whole or in part, by Buyer in its sole discretion:

(a) Representations and Warranties Correct; Performance. The representations and warranties of Seller contained in this Agreement (including the Exhibits hereto) shall be true, complete and accurate in all material respects (except that such representations and warranties which are qualified as to materiality shall be accurate and complete in all respects) as of the date hereof and the Closing Date, and Seller shall have delivered to Buyer a certificate, dated as of the date hereof and the Closing Date, to such effect signed by its President. Seller shall have duly and properly performed, complied with and observed in all material respects each of its covenants, agreements and obligations contained in this Agreement to be performed, complied with and observed on or before the Closing Date, and Seller shall have delivered to Buyer a certificate, dated the Closing Date, to such effect signed by its Managing Member.

(b) Purchase Permitted by Applicable Laws. The purchase of and payment for the Assets to be purchased by Buyer hereunder shall not be prohibited by any applicable law or governmental regulation.

(c) Proceedings; Receipt of Documents. All corporate and other proceedings taken or required to be taken by Seller in connection with the transactions contemplated hereby and all documents incident thereto shall have been taken and shall be reasonably satisfactory in form and substance to Buyer, and Buyer shall have received all such information and such counterpart originals or certified or other copies of such documents as Buyer may reasonably request.

(d) Delivery of Documents. Seller shall have delivered, or caused to be delivered, to Buyer the following:

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(i) on the date hereof and the Closing Date, a certificate of the Managing Member of Seller, certifying resolutions of the Managing Member of Seller authorizing the transactions contemplated herein and the incumbency of the Managing Member of Seller executing any document or instrument delivered in connection with such transactions;

(ii) on the date hereof and the Closing Date, a limited liability company good standing certificate of Seller from the jurisdiction in which Seller is organized dated as of a recent date;

(iii) on the Closing Date documentation evidencing the assignment of all patents from the inventors of the Program to Seller and the related filing with the US Patent and Trademark Office and all files and documents reasonably necessary to establish Seller's ownership of the Assets;

(iv) on the Closing Date documentation evidencing the payment of all patent prosecution fees owed on such date and all annuity, maintenance, extension and the like fees on the patents that comprise the Assets through the date of Closing;

(v) on the Closing Date a duly executed Assignment and Bill of Sale with respect to the Assets, in substantially the form of Exhibit F annexed hereto and with respect to all of the Patents listed on Exhibit B hereto an executed and notarized Patent Assignment in the form of Exhibit H annexed hereto for filing by the Buyer with the United States Patent and Trademark Office;

(vi) on the Closing Date, evidence of ownership of the Patents listed on Exhibit B;

(vii) on the Closing Date a duly executed copy of the Escrow Agreement;

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(viii) on the Closing Date transfer of possession of any tangible property related to the Program which is in Seller's possession or readily available to Seller; and

(ix) all other consents, agreements, schedules, documents and exhibits required by this Agreement to be delivered by Seller at or before the Closing.

(e) No Adverse Decision. There shall be no action, suit, investigation or proceeding pending or threatened by or before any court, arbitrator or administrative or governmental body which seeks to restrain, enjoin, prevent the consummation of or otherwise affect the transactions contemplated by this Agreement or questions the validity or legality of any such transactions or seeks to recover damages or to obtain other relief in connection with any such transactions.

(f) Approvals and Consents. Seller shall have duly obtained all authorizations, consents, rulings, approvals, licenses, franchises, permits and certificates, or exemptions therefrom, by or of all governmental authorities and non-governmental administrative or regulatory agencies having jurisdiction over the parties hereto, this Agreement, the Assets or the transactions contemplated hereby, including, without limitation, all third parties pursuant to existing agreements or instruments by which Seller may be bound, which are required for the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated hereby, at no material cost or other material adverse consequence to Buyer, and all thereof shall be in full force and effect at the time of Closing.

(g) Employees and Consultants. Seller shall have delivered to Buyer agreements signed by each of its employees, if any, and consultants involved in any manner with development efforts related to the Program (i) waiving any and all rights to, and conveying to Seller, any and all right, title and interest in, all proprietary products, patents, copyrights, trademarks (or applications in respect of any thereof) and any and all other intellectual property comprising any part of the Assets or developed or conceived by such employee or consultant while so employed; and (ii) agreeing that each such employee or consultant will not disclose any confidential information and documents related to the Assets in perpetuity, except as may be permitted under such agreements for exclusions typically taken for information already released to the public and other similar exclusions.

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(h) Due Diligence. Buyer shall have completed the due diligence on the Assets and the Seller, the completion of and the satisfactoriness of the scientific and financial due diligence in the sole discretion of the Buyer.

(i) Audit. If Buyer shall deem it necessary, Seller shall have permitted a PCAOB registered independent accounting firm retained by Buyer, at Buyer's expense, to review the books and records of Seller and such firm shall have either completed an audit of Buyer's books and records or concluded that Buyer's books and records are auditable.

3.3 Conditions to the Obligation of Seller. The obligation of Seller to consummate the transactions contemplated hereby is subject to the fulfillment of the following conditions on or prior to the Closing Date, any of which may be waived, in whole or in part, by Seller in its sole discretion:

(a) Representations and Warranties Correct; Performance. The representations and warranties of Buyer in this Agreement shall be true, complete and accurate in all material respects (except that such representations and warranties which are qualified as to materiality shall be accurate and complete in all respects) when made and on and as of the date hereof and the Closing Date and Buyer shall have delivered to Seller a certificate, dated the date hereof and the Closing Date, certifying to such matters and signed by its President. Buyer shall have duly and properly performed, complied with and observed in all material respects each of its covenants, agreements and obligations contained in this Agreement to be performed, complied with and observed on or before the Closing Date. Buyer shall have delivered to Seller a certificate, dated the Closing Date, certifying to such matters and signed by its President.

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(b) Purchase Permitted by Applicable Laws. The purchase of and payment for the Assets shall not be prohibited by any applicable law or governmental regulation.

(c) No Adverse Decision. There shall be no action, suit, investigation or proceeding pending or threatened by or before any court, arbitrator or administrative or governmental body which seeks to restrain, enjoin or prevent the consummation of or otherwise affect the transactions contemplated by this Agreement or questions the validity or legality of any such transactions or seeks to recover damages or to obtain other relief in connection with any such transactions.

(d) Delivery of Documents. Buyer shall have delivered, or caused to be delivered, to Seller the following:

(i) on the date hereof and the Closing Date, a certificate of an appropriate officer of Buyer (or a certificate of both Synthetic and Buyer, if Buyer is a wholly owned subsidiary of Synthetic), certifying resolutions of the Board of Directors of Buyer authorizing the transactions contemplated herein and the incumbency of officers of Buyer executing any document or instrument delivered in connection with such transactions;

(ii) on the date hereof evidence that Buyer has been duly incorporated in Nevada and on the Closing Date, a corporate good standing certificate of Buyer from the jurisdiction in which Buyer is incorporated dated as of a recent date;

(iii) the cash consideration set forth in Section 2.4(a) on the dates specified therein;

(iv) on the Closing Date, certificates evidencing the Shares, of which Three Hundred Seventy Five Thousand (375,000) shall be delivered to the escrow agent in accordance with the terms of the Escrow Agreement;

(v) on the Closing Date a duly executed copy of the Escrow Agreement;

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

- (vi) on the Closing Date documentation evidencing approval of the NYSE MKT, LLC of the issuance of the Shares;
- (vii) on the Closing Date payment of any audit fees incurred by Buyer from a PCAOB registered and certified accounting firm retained by Buyer in connection with this transaction;
- (viii) all other consents, agreements, schedules, documents and exhibits required by this Agreement to be delivered by Buyer at or before the Closing; and
- (ix) reimbursement of costs and expenses for which Buyer (or Buyer and Synthetic, if Buyer is a wholly owned subsidiary of Synthetic) are responsible under Section 2.3.

#### ARTICLE IV

#### SELLER'S REPRESENTATIONS AND WARRANTIES

Seller represents and warrants to, and agrees with, Buyer as follows as of the date hereof:

- 4.1 Organization and Good Standing. Seller is a limited liability company duly organized, validly existing and in good standing under the laws of the State of Maryland.

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

4.2 Limited Liability Company Authority. Seller has full authority to execute and to perform this Agreement in accordance with its terms; the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby does not and will not result in a breach, violation or default or give rise to an event which, with the giving of notice or after the passage of time, or both, would result in a breach, violation or default of (i) any of the terms or provisions of Seller's Articles of Organization or Operating Agreement; or (ii) of any indenture, agreement, judgment, decree or other instrument or restriction to which Seller is a party or by which Seller or any of the Assets may be bound or affected, except in the case of clause (ii) where such breach, violation or default would not have a material adverse effect on the assets or the Program ("Material Adverse Effect"); the execution and delivery of this Agreement has been and, as of the Closing Date, the consummation of the transactions contemplated hereby will have been, duly authorized by all requisite limited liability company action on the part of Seller and, as of the date hereof, no further authorization or approval, whether of the stockholders or directors of Seller or governmental bodies or otherwise will be necessary in order to enable Seller to enter into and perform the same; and, assuming the due authorization, execution and delivery of this Agreement by Buyer, this Agreement constitutes a valid and binding obligation of Seller enforceable against Seller in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent transfer and other similar laws affecting creditors' rights generally from time to time in effect and to general principles of equity (including concepts of materiality, reasonableness, good faith and fair dealing) regardless of whether considered in a proceeding in equity or at law.

4.3 Title to Assets.

(a) Seller has good and marketable title to all of the Assets, including, without limitation, the Program and the Proprietary Rights;

(b) None of such Assets, or the use thereof is subject to any easements or restrictions or to any mortgages, liens, pledges, charges, security interests, encumbrances or encroachments, or to any rights of others of any kind of nature whatsoever. There are no agreements or arrangements between Seller and any third person which have any effect upon Seller's title to or other rights respecting the Assets;

(c) Seller has made available to Buyer all files owned or controlled by Seller relating to the ownership, prosecution or issuance of the Proprietary Rights being assigned other than those files retained by its patent and/or trademark counsel, in which case Seller has made its counsel available to Buyer; and



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(d) Seller is unaware of any divisional, continuation, continuation in part, reissue or re-examination applications, or any patents issued therefrom, that rely on the patents set forth on Exhibit B hereto.

#### 4.4 Intellectual Property.

(a) Seller owns all right, title and interest by assignment and possesses a valid and enforceable right to use, all of the Proprietary Rights used in the Program, and no claim to the contrary by any other person to the rights of Seller with respect to the foregoing is pending or, to Seller's knowledge, threatened and Seller does not have any reason to believe that Seller will not be able to properly record the assignment of the patents and patent applications that are included in the Assets with the appropriate U.S. and international patent offices in the name of Buyer at Closing.

(b) There is no unauthorized use, disclosure, infringement or misappropriation of Seller's Proprietary Rights by any third party, other than any such unauthorized use, disclosure, infringement or misappropriation that would not have a Material Adverse Effect.

(c) Exhibit B attached hereto lists all patents and patent applications and all registered trademarks, service marks and copyrights included as part of the Assets ("Registered Proprietary Rights"). Except as set forth on Exhibit B, Seller owns exclusively all such Registered Proprietary Rights.

(d) Seller has no present or known future obligation or requirement to compensate any person with respect to the Assets, whether by the payment of royalties or not, or whether by reason of the ownership, use, license, lease, sale or any commercial use or any disposition whatsoever of the Program or the Proprietary Rights;

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(e) None of the present or former employees of Seller own directly or indirectly, or has any other right or interest in, in whole or in part, the Program, or the Proprietary Rights;

(f) Seller has not granted any rights or interest in the Assets to any third party;

(g) All issued patents listed on Exhibit B hereto are subsisting and in full force and effect. Neither the execution of this Agreement nor the assignment of the patents and patent rights listed on Exhibit B hereto will result in any loss or impairment of the right, title and interest in and to such patents. None of the patents listed on Exhibit B hereto is currently involved in any reexamination reissue, interference, opposition or similar proceeding, and no such proceedings are pending or threatened;

(h) All licenses necessary for the present conduct of Seller's business related to the Program and its making, using, licensing and selling of the Program and products related thereto have been obtained and are listed in Exhibit B hereto; and

(i) To the best knowledge of Seller, the pending patent applications listed in Exhibit B are currently pending at the United States Patent and Trademark Office and International PTO and all required filings relating thereto have been made.

4.5 Compliance With Law. Seller is not in violation in any material respect of any laws, governmental orders, rules or regulations to which the Assets or Seller's business related to the Assets are subject.

4.6 Agreements. There are no material contracts, instruments, commitments or agreements relating to the Assets, whether oral or written, including any license or sublicense agreements, presently in effect to which Seller is a party or to which Seller or any of its properties is subject, including, without limitation, the following:

(a) any plan or contract or arrangement, oral or written, relating to the Assets providing for employment or consulting services, bonuses, royalties, commissions, pensions, stock purchase or stock option or other stock rights, deferred compensation, retirement or severance payments, profit sharing, or the like;



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(b) any instrument or arrangement relating to the Assets evidencing or relating in any way to (i) indebtedness for borrowed money by way of direct loan, purchase money obligation, conditional sale, lease purchase arrangement, guarantee or otherwise; (ii) liens, encumbrances or security interests (other than liens for taxes not yet due and payable); (iii) guaranties or indemnification; or (iv) investments in any person;

(c) any contract relating to the Assets containing provisions limiting the freedom of Seller to engage in any business or compete in any line of business or in any geographic area or with any person;

(d) any license, sublicense, lease or sublease agreement relating to the Assets, whether as licensor, sublicensor, licensee, sublicensee, lessor, sublessor, lessee, sublessee or otherwise, or any agreements relating to the Assets with dealers, vendors, customers, suppliers, sales representatives, any governmental entity, fund or university, or any agents, marketing representatives, brokers or distributors; or

(e) any joint venture contract or arrangement or other agreement relating to the Assets involving a sharing of profits or expenses, or any joint or other technology development, cooperation or exchange contract or arrangement.

4.7 Litigation. There are no actions, suits, proceedings or investigations (including any purportedly on behalf of Seller) relating to the Assets pending or, to the knowledge of Seller, threatened against or affecting the Assets or Seller's business related to the Assets whether at law or in equity or admiralty or before or by any governmental department, commission, board, agency, court or instrumentality, domestic or foreign; including any patent enforcement actions or any other intellectual property prosecution actions.

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4.8 Liabilities. As of the Closing Date, there will be no outstanding liabilities with respect to the Assets, other than liens for taxes not yet due and payable, and all intellectual property prosecution fees owed through the date hereof, if any have been paid in full. As of the Closing Date, all filing, maintenance and annuity, extensions and like fees required to be paid or accrued as of the date hereto with respect to all of the issued patents listed on Exhibit B hereto will have been paid by Seller (for the avoidance of doubt, such timely payment includes payment of any maintenance fees for which the fee is payable even if the surcharge date or final deadline for such fee would be in the future). With respect to the jurisdictions set forth on Exhibit B, the anticipated filing, maintenance and annuity, extensions and like fees required that will be required to be paid with respect to all of the issued patents listed on Exhibit B hereto within the next thirty (30) days is accurate.

4.9 Brokers. There has been no broker or finder involved in any manner in the negotiations leading up to the execution of this Agreement or the consummation of any transactions contemplated hereby and Seller agrees to indemnify Buyer against and hold Buyer harmless from any claim made by any party for a broker's or finder's fee or other similar payment based upon any agreements, arrangements or understanding made by Seller.

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4.10 Accredited Investor. The Seller is acquiring the Shares for its own account for investment only and not with a view towards the public sale or distribution thereof and not with a view to or for sale in connection with any distribution thereof. The Seller was not formed for the purpose of investing in the Shares. Each member of the Seller is (i) an “accredited investor” as that term is defined in Rule 501 of the General Rules and Regulations under the Securities Act by reason of Rule 501(a)(3); (ii) experienced in making investments of the kind described in this Agreement and the related documents; (iii) able, by reason of the business and financial experience of its officers and professional advisors (who are not affiliated with or compensated in any way by the Buyer or any of its affiliates or selling agents), to protect its own interests in connection with the transactions described in this Agreement, and the related documents, and (iv) able to afford the entire loss of its investment in the Shares. The Seller understands that the Shares are being offered and issued to it in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and that the Buyer is relying upon the truth and accuracy of, and the Seller’s compliance with, the representations, warranties, agreements, acknowledgements and understandings of the Seller set forth herein in order to determine the availability of such exemptions and the eligibility of the Seller to acquire the Shares;

4.11 SEC Filings. The Seller and its advisors, if any, have been furnished with all materials relating to the business, finances and operations of the Buyer and materials relating to the offer and sale of the Shares which have been requested by the Seller. The Seller and its advisors, if any, have been afforded the opportunity to ask questions of the Buyer and have received complete and satisfactory answers to any such inquiries. Without limiting the generality of the foregoing, the Seller has also had the opportunity to obtain and to review the Buyer’s Annual Report on Form 10-K/A for the year ended December 31, 2011, its Quarterly Report on Form 10-Q for each of the quarters ended March 31, 2012 and June 30, 2012 filed with the Securities and Exchange Commission (the “SEC Documents”). Neither the Buyer nor any other person on its behalf has made any representations to the Seller except as contained in the Buyer’s SEC Documents or in this Agreement and in making the decision to purchase the Shares, the Seller has not relied on any representation or information other than those which Seller has independently investigated and verified.

4.12 Risks. The Seller understands that its investment in the Shares involves a high degree of risk and that Seller can bear the economic risk of the purchase of the Shares, including total loss of his investment. Seller has adequate means of providing for current needs and has no need for liquidity in the investment. Reference is made to the factors discussed in the “Risk Factor” section of Buyer’s SEC documents.

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4.13 Grants. The Seller has no knowledge that any pending NIH grants or any other grants that it has shall be terminated or are subject to termination or non-fulfillment either prior to or as a result of this Agreement. Seller shall provide all reasonable cooperation to assist Buyer in finalizing any NIH pending grants associated with the Program.

4.14 Exclusive Representations and Warranties. Other than the representations and warranties set forth in this Agreement (including the Exhibits hereto), Seller is not making any other representation or warranty, express or implied, with respect to the Assets or the Program.

## ARTICLE V

### REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer (or Synthetic and Buyer jointly and severally, if Buyer is a wholly owned subsidiary of Synthetic) represents and warrants to, and agrees with, Seller as follows:

5.1 Organization and Good Standing. It is a corporation duly organized, validly existing and in good standing under the laws of the State of Nevada.

5.2 Corporate Authority. It has full authority to execute and to perform this Agreement in accordance with its terms; the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby does not and will not result in a breach, violation or default or give rise to an event which, with the giving of notice or after the passage of time, or both, would result in a breach, violation or default of any of the terms or provisions of its Certificate of Incorporation, By-Laws or of any indenture, agreement, judgment, decree or other instrument or restriction to which it is a party or by which it may be bound or affected; the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby have been duly authorized by all requisite corporate action on the part of it and no further authorization or approval, whether of its stockholders or directors or governmental bodies or otherwise, is necessary in order to enable it to enter into and perform the same (other than NYSE MKT approval); and this Agreement constitutes a valid and binding obligation enforceable against it in accordance with its terms.

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5.3 Capitalization. Synthetic has provided to Seller a schedule that sets forth its authorized and issued capital stock, options, warrants and convertible securities. Other than as set forth on such schedule, Synthetic does not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into or any contracts or commitments to issue or sell common stock or any such warrants, convertible securities or obligations.

5.4 Validity of Shares. The Shares have been duly authorized and upon receipt of the approval of the NYSE MKT LLC, will be validly issued (including, without limitation, in compliance with applicable federal and state securities laws) and when issued as provided herein will be fully paid and non-assessable. Such Shares are free and clear of all mortgages, pledges, liens, security interests, encumbrances, conditional sales agreements, charges, claims and restrictions of any kind and nature whatsoever, and the Seller will obtain good and valid title to such Shares free and clear of all mortgages, pledges, liens, security interests, encumbrances, conditional sales agreements, charges, claims and restrictions of any kind and nature whatsoever.

5.5 SEC Documents. Notwithstanding the foregoing, it represents and warrants that each of the SEC Documents presents fairly Synthetic's financial condition as of the date of such filing and there has been no material adverse change in its financial condition from the date of the SEC Documents.



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5.5 Brokers. There has been no broker or finder involved in any manner in the negotiations leading up to the execution of this Agreement or the consummation of any transactions contemplated hereby and Buyer agrees to indemnify Seller against and hold Seller harmless from any claim made by any party for a broker's or finder's fee or other similar payment based upon any agreements, arrangements or understanding made by Buyer.

## ARTICLE VI

### COVENANTS OF SELLER

6.1 Delivery of Assets. Simultaneously herewith, Seller shall deliver to Buyer all materials and other information Seller has which comprise or exclusively relate to the Assets, including all existing, proposed or expired agreements exclusively respecting the Program and all regulatory filings related to the Assets.

6.2 Further Assurances. Seller agrees that, at any time after the date hereof, upon the request of Buyer, it will do, execute, acknowledge and deliver, or will cause to be done, executed, acknowledged and delivered, all such further acknowledgments, deeds, assignments, bills of sale, transfers, conveyances, instruments, consents and assurances as may reasonably be required for the better assigning, transferring, granting, conveying, assuring and confirming to Buyer, its successors and assigns, the Assets to be transferred to Buyer as provided herein. Seller agrees to cause its officers, managing member and management to reasonably cooperate with Buyer and Buyer's representatives and agents to make themselves available to the extent reasonably necessary to complete the transfer of the Assets and the filing of any assignments with the United States Patent and Trademark Office and any foreign similar office. In the event that a party hereto becomes aware of any existing patent or pending patent application that is covered by the definition of Proprietary Rights but which is not currently listed on Exhibit B hereto, such patent or patent application shall automatically be covered by the definition of Proprietary Rights and shall be deemed to constitute a Proprietary Right of Buyer. Seller, at no cost or expense to Seller, shall take all action reasonably requested by Buyer to effectuate the assignment to Buyer of any grants or pending grants and to effectuate the obtainment and possession of any tangible material related to the Program.

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6.3 Information Rights. Buyer shall provide Seller with any rights to non-public financial information, financial statements, inspection rights, and other information rights specifically provided to any other common shareholders.

6.4 Conduct of the Business Pending the Closing. From and after the date hereof until the Closing Date:

(a) Seller shall carry on its business relating to the Assets and the Program in the ordinary course consistent with past practice, including, without limitation, the prosecution of any pending patent applications, and the payment of any maintenance fees upon the earliest date due on any patents, included in the Assets or related thereto, shall preserve its ownership in the Assets, and shall not engage in any transaction or activity relating to the Assets, enter into any agreement, or make any commitment relating to the Assets;

(b) Seller shall preserve and keep intact its business organization relating to the Assets;

(c) Except as permitted by this Agreement, without the prior written consent of Buyer, Seller will not:

(i) permit or allow any of the Assets to be subjected to any mortgages, liens, pledges, charges, security interests, encumbrances or encroachments, or to any rights of others of any kind of nature whatsoever;

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- (ii) take any actions to modify, terminate or amend any of the documents comprising the Assets;
  
- (iii) engage in the sale, license, assignment, transfer, conveyance, lease, mortgage, pledge or other disposition of the Assets;
  
- (iv) incur any liability relating to the Assets other than the fees set forth in Section 2.3 which Seller has agreed to pay and Buyer has (or Synthetic and Buyer, if Buyer is a wholly owned subsidiary of Synthetic have) agreed to reimburse; or
  
- (v) agree, whether in writing or otherwise, to do any of the foregoing.
  
- (d) Seller shall not do any act or omit to do any act, which will cause a breach of any contract or commitment of Seller or which would cause the breach of any representation, warranty or covenant made hereunder.

## ARTICLE VII

### CONDUCT OF BUSINESS OF BUYER PENDING FILING OF AN IND

Between the Closing Date and the filing of an IND:

7.1 Regular Course of Business. Buyer shall carry on its business relating to the Assets and the Program in the ordinary course consistent with past practice, including, without limitation, the prosecution of any pending patent applications, and the payment of any maintenance fees upon the earliest date due on any patents, included in the Assets or related thereto, shall preserve its ownership in the Assets, and shall not engage in any transaction or activity relating to the Assets, enter into any sale, license, pledge or encumbrance of the Assets. To the extent that Buyer deems it advisable to sublicense ex-U.S. rights prior to the filing on an IND to further the development of Assets in international regulatory jurisdictions wherein any such sublicense will be subject to the terms of this Agreement, Seller agrees to not unreasonably withhold consent for such sublicense without consideration.



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7.2 Organization. Buyer shall preserve and keep intact its business organization relating to the Assets and shall use reasonable efforts to continue to make all payments and filings necessary to maintain all patent filings in jurisdictions in which Seller currently has made filings.

7.3 Certain Changes. Except as permitted by this Agreement, without the prior written consent of Seller, Buyer will not:

- (a) permit or allow any of the Assets to be subjected to any mortgages, liens, pledges, charges, security interests, encumbrances or encroachments, or to any rights of others of any kind of nature whatsoever;
- (b) take any actions to modify, terminate or amend any of the documents comprising the Assets;
- (c) engage in the sale, license, assignment, transfer, conveyance, lease, mortgage, pledge or other disposition of the Assets;
- (d) incur any liability relating to the Assets; or
- (e) agree, whether in writing or otherwise, to do any of the foregoing.

7.4 No Default. Buyer shall not do any act or omit to do any act, which will cause a breach of any contract or commitment of Buyer or which would cause the breach of any representation, warranty or covenant made hereunder.

## ARTICLE VIII

### SURVIVAL; INDEMNIFICATION

8.1 Survival of Representations and Warranties. The representations and warranties set forth in Article IV shall survive the Closing Date. All covenants and agreements that by their terms apply, or that are to be performed in whole or in part at or after the Closing, shall survive from and after the Closing Date for the period provided in such covenant or agreement, if any, or otherwise until fully performed. The provisions of this Section 8.1 shall survive the termination of this Agreement.

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8.2 Seller Indemnity Against Claims. Seller hereby agrees to indemnify and hold Buyer harmless from and against any and all liabilities, losses, damages, claims, costs and reasonable expenses of any nature, including attorney fees and costs ("Loss") to the extent such Loss arises from or in connection with the following:

- (a) any material breach by Seller of any representation or warranty contained in this Agreement;
- (b) any material breach by Seller of any of its covenants contained in this Agreement; and
- (c) any excluded liability.

The indemnity granted by Seller in this paragraph shall not apply with respect to any Loss arising out of any breach by Buyer of its representations, warranties and agreements set forth herein.

8.3 Buyer Indemnity Against Claims. Buyer hereby agrees to indemnify and hold Seller harmless from and against any and all Losses to the extent such Losses arise from or in connection with the following:

- (a) any material breach by Buyer of any representation or warranty contained in this Agreement;
- (b) any material breach by Buyer of any of its covenants contained in this Agreement; and
- (c) any Assumed Liability.

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The indemnity granted by Buyer in this paragraph shall not apply with respect to any Loss arising out of any breach by Seller of its representations, warranties and agreements set forth herein.

8.4 Notice of Claim, Assumption of Defense and Settlement of Claims.

(a) A party seeking indemnification (an "Indemnified Party") under this Article VIII shall promptly give notice (an "Indemnification Notice") in accordance with Section 13.1 hereof to the indemnifying party (the "Indemnifying Party") after the Indemnified Party shall have knowledge of any demands, claims, actions or causes of action (singly, a "Claim" and hereinafter referred to collectively, as "Claims") which might give rise to a Claim by the Indemnified Party against the Indemnifying Party, stating the nature and basis of said Claim and the amount thereof, to the extent known. A failure to give notice hereunder shall not relieve the Indemnifying Party from any obligation hereunder except to the extent such failure to give notice shall materially and adversely affect the Indemnifying Party's ability to defend the Claim. After the delivery of an Indemnification Notice certifying that the Indemnified Party has incurred or had asserted against it any Losses for which indemnity may be sought in accordance with the terms of this Article VIII, the Indemnified Party shall deliver to the Indemnifying Party all information and documentation reasonably requested by the Indemnifying Party with respect to such Loss.

(b) With respect to any third party Claims made subsequent to the Closing Date, the following procedures shall be observed:

(i) Promptly after delivery of an Indemnification Notice in respect of a Claim, the Indemnifying Party may elect, by written notice to the Indemnified Party, to undertake the defense thereof with counsel reasonably satisfactory to the Indemnified Party and at the sole cost and expense of the Indemnifying Party.



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(ii) Failure by the Indemnifying Party to notify the Indemnified Party of its election to defend any such action within twenty (20) days after notice thereof shall have been given, shall be deemed a waiver by the Indemnifying Party of its right to defend and settle such action. If the Indemnifying Party assumes the defense of any such Claim, its obligations hereunder as to such Claim shall be limited to taking all steps reasonably necessary in the defense or settlement of such Claim and to holding the Indemnified Party harmless from and against any and all Losses awarded in any such proceeding or arising out of any settlement approved by the Indemnifying Party or any judgment in connection with such Claim.

(iii) The Indemnifying Party shall not, in the defense of any such Claim, consent to the entry of any judgment (except with the prior written consent of the Indemnified Party, which consent shall not be unreasonably withheld or delayed) or enter into any settlement (except with the prior written consent of the Indemnified Party, which consent shall not be unreasonably withheld or delayed ) which does not include as an unconditional term thereof the giving by the claimant or the plaintiff to the Indemnified Party of a complete release from all liability in respect of such Claim.

(iv) If the Indemnifying Party does not assume the defense of a Claim, the Indemnified Party shall diligently defend such claim, and the Indemnifying Party shall promptly reimburse the Indemnified Party for all reasonable expenses, legal or otherwise, incurred by the Indemnified Party in connection with the defense against and settlement of such Claim, net of any tax benefits realized by Buyer arising from such expenses, as and when the same shall be incurred by the Indemnified Party; provided, however, that the Indemnified Party provides an undertaking to repay such expenses to the Indemnifying Party if it is ultimately and finally determined by a court of competent jurisdiction and all rights of appeal have lapsed that such Indemnified Party is not entitled to indemnification under this Article VIII or under applicable law or otherwise. The Indemnified Party shall not admit any liability with respect to, or settle, compromise or discharge, such third party Claim without the Indemnifying Party's prior written consent, which will not be unreasonably withheld or delayed. In the event the Indemnified Party assumes the defense of the Claim, the Indemnified Party will keep the Indemnifying Party reasonably informed of the progress of any such defense, compromise or settlement.

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- (v) The Indemnifying Party shall reimburse the Indemnified Party for all Losses actually incurred by the Indemnified Party as ultimately and finally determined by a court of competent jurisdiction, net of any tax benefits realized by Buyer arising from such Losses.
  
- (c) With respect to any Claims other than third party Claims made subsequent to the Closing Date, the following procedures shall be observed:
  - (i) The Indemnifying Party shall have thirty (30) days following receipt of any Indemnification Notice pursuant hereto to (A) agree to the amount or method of determination of Losses set forth in the Indemnification Notice to pay such amount to the Indemnified Party in immediately available funds, or (B) provide the Indemnified Party with notice that they disagree with the amount or method of determination of Losses set forth in the Indemnification Notice, and the parties shall thereafter attempt to resolve the disagreement by negotiation in good faith; provided that if the parties are unable to reach agreement within sixty (60) days of such notice, the dispute shall be submitted for final adjudication to the applicable court sitting in the State of Michigan in accordance with Section 13.3. The Indemnifying Party shall reimburse the Indemnified Party for all Losses actually incurred by the Indemnified Party as ultimately and finally determined by a court of competent jurisdiction, net of any tax benefits realized by Buyer arising from such Losses.

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8.5 Limitations; Exclusive Remedy; Effect of Knowledge of Breach.

(a) Buyer and Seller acknowledge and agree that the indemnification provided in this Article VIII shall not be the sole remedy for Losses related to or arising at law, under any statute or in equity, or otherwise out of this Agreement or the transactions contemplated hereby (other than claims of or causes of action arising from a finding of actual fraud or willful misconduct); and

(b) Without limiting the effect of any other limitation contained in this Article VIII, no representation or warranty of Seller, on the one hand, or Buyer, on the other hand, shall be deemed to be or to have been breached if the other party establishes by documentary evidence that the counterparty had knowledge, on or prior to the date of this Agreement of the breach of such representation or warranty, or of any facts or circumstances rendering such representation or warranty inaccurate.

8.6 Right to Set Off. Notwithstanding anything to the contrary set forth in this Agreement or any Exhibit hereto, with respect to any amounts due and payable to Buyer under this Article VIII, Buyer shall have the right to set off the amount of such Loss against any amounts due to Seller hereunder or otherwise.

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## ARTICLE IX

### CONFIDENTIALITY AND NON-COMPETITION

9.1 Confidentiality. From after the Closing Date and for a period of five (5) years thereafter or earlier termination of this Agreement, Seller shall retain in strictest confidence, and shall not use for its benefit or for the benefit of others all confidential information comprising or related to the Assets, including, without limitation, the technology, know-how, trade secrets, transferred hereby to Buyer, product development techniques or plans, or technical processes, designs and design projects exclusively respecting the Program; *provided, however*, that Seller may use or disclose any such confidential information to fulfill any of its obligations hereunder. Notwithstanding the foregoing, Seller shall not be prohibited from using or disclosing any such confidential information which: (i) enters the public domain or is publicly available, provided that such public knowledge was not the result of any breach of this Agreement attributable to the Seller, or (ii) is required to be disclosed by such Seller pursuant to applicable law or court order, in which case, the Seller shall give written notice to Buyer prior to such disclosure so that Buyer may seek a protective order or other appropriate remedy, and the Seller will reasonably cooperate with Buyer in any proceeding to obtain a protective order or other remedy. From after the execution of this Agreement until the Closing Date or earlier termination of this Agreement, each party shall retain in strictest confidence, and shall not use for its benefit or for the benefit of others all confidential information comprising or related to the Assets other than in order to fulfill its obligations under this Agreement, including, without limitation, the technology, know-how, trade secrets, transferred hereby to Buyer, product development techniques or plans, or technical processes, designs and design projects exclusively respecting the Program. Notwithstanding the foregoing, neither party shall be prohibited from using or disclosing any such confidential information which: (i) enters the public domain or is publicly available, provided that such public knowledge was not the result of any breach of this Agreement attributable to the receiving party; or (ii) is required to be disclosed by the receiving party pursuant to applicable law, rule or regulation applicable to such party or court order, in which case, the receiving party shall give written notice to the disclosing party prior to such disclosure so that the disclosing party may seek a protective order or other appropriate remedy, and the receiving party will reasonably cooperate with the disclosing party in any proceeding to obtain a protective order or other remedy. The Buyer's obligations under the third sentence of this Section 9.1 shall continue for a period of five (5) years after execution of this Agreement if this Agreement is terminated prior to Closing.

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9.2 Non-Competition.

(a) For a period ending on the earlier of termination of this Agreement or five (5) years from and after the Closing Date, Seller shall not, directly or indirectly engage in a business or enterprise (either as proprietor, partner, employee, agent, consultant, or controlling stockholder) in the development or marketing of any program or intellectual property focused on Clostridium Difficile Associated Diarrhea (CDAD) (a "competing business").

(b) The provisions of this Section 9.2 shall not prevent Seller from directly or indirectly investing its assets in securities of any corporation, or otherwise acquiring an equity interest in any enterprise, equity securities of which are publicly owned and traded, provided that such investments or interests shall not result in (i) Seller directly or indirectly owning beneficially, in the aggregate, five percent (5%) or more of the equity securities of any enterprise engaged in a competing business or (ii) Seller being able to control or actively participate in the policy decisions of such competing business.

(c) It is the desire and intent of the parties that the provisions of this Section 9.2 shall be enforced to the fullest extent permissible under the laws and public policies applied in each jurisdiction in which enforcement is sought. If any particular provision or portion of this Section 9.2 shall be adjudicated to be invalid or unenforceable in any jurisdiction, this Section 9.2 shall be deemed amended to delete therefrom such provision or portion adjudicated to be invalid or unenforceable, such amendment to apply only with respect to the operation of this paragraph in the particular jurisdiction in which such adjudication is made. If there is a breach or threatened breach of the provisions of this Section 9.2, Buyer shall be entitled to an injunction restraining the Seller from such breach without the obligation of posting a bond. Nothing herein shall be construed as prohibiting Buyer from pursuing any other remedies for such breach or threatened breach.

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(d) Seller declares that the foregoing territorial and time limitations are reasonable and properly required for the adequate protection of the business of Buyer. In the event any such territorial or time limitation is deemed to be unreasonable by a court of competent jurisdiction, Seller agrees to the reduction of either said territorial or time limitation to such area or period which said court shall have deemed reasonable.

(e) The existence of any claim or cause of action by Seller against Buyer or any subsidiary other than under this Agreement shall not constitute a defense to the enforcement by Buyer or any subsidiary of the foregoing restrictive covenants, but such claim or cause of action shall be litigated separately.

(f) The undertakings and covenants of Seller contained in this Section 9.2 are an integral part of the transactions set forth in this Agreement and the consideration paid by Buyer pursuant to this Agreement shall be consideration not only for the Assets but also for such undertakings and covenants.

## ARTICLE X

### SPECIAL COVENANTS

10.1 Cooperation. The parties shall cooperate with each other fully with respect to actions reasonably required or requested to be undertaken with respect to tax audits, administrative actions or proceedings, litigation and any other matters that may occur after the date hereof, and each party shall maintain and make available to the other party upon reasonable request all corporate, tax and other records required or requested in connection with such matters. Seller shall also reasonably assist Buyer, at no cost to Seller, in asserting claims under the assigned patents including obtaining from the inventors prompt production of documents and facts, giving of testimony, execution of petitions and other assistance necessary for filing patent applications, infringement and enforcement or other actions or proceedings.

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10.2 Publicity. Each party hereto agrees that it shall not disclose any of the terms and conditions of this Agreement or the transactions contemplated hereby and that no publicity release or announcement concerning this Agreement or the transactions contemplated hereby shall be issued, in each case without the advance written approval of the other party; provided, however that each party shall be entitled to disclose the terms and conditions of this Agreement and the transactions contemplated hereby if it is required to be disclosed by it pursuant to applicable law, rule or regulation or court order. Notwithstanding the foregoing, each party may disclose the terms of this Agreement to their accountants and attorneys solely for use in connection with the preparation of tax returns or in complying with the terms of this Agreement.

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## ARTICLE XI

### CLAWBACK RIGHTS/UNWIND

11.1 Rights of the Seller To Force An Unwind. If on or prior to the date that is (i) thirty (30) months after the date of the execution of this Agreement, the Buyer has not initiated toxicology studies in a non-rodent model, or (ii) thirty-six (36) months of the date of execution of this Agreement, the Buyer has not filed an IND under the Program and such failure to file is not related to and not due to any action or inaction of the Seller or a breach of the representations or warranties or covenants of the Seller contained in this Agreement, then, as an exclusive remedy, Seller may elect, in its sole discretion, to have the Assets reverted back to Seller and Buyer shall no longer have any right, title or interest in the Assets. Notwithstanding the foregoing, Buyer shall have the right to extend the foregoing thirty (30) and thirty-six (36) month periods by an additional twelve (12) months by advancing to Seller the first milestone payment of \*\*\*\*\* on or before (a) thirty (30) months of the date of execution of this Agreement if Buyer has not initiated toxicology studies in a non-rodent model under the Program, or (b) thirty-six (36) months of the date of execution of this Agreement if Buyer has not filed an IND under the Program, time being of the essence. In addition, if a change of control of Buyer (or Buyer or Synthetic, if Buyer is a wholly owned subsidiary of Synthetic) shall occur and thereafter Buyer fails to use reasonable efforts to pursue development of the Program, then, as an exclusive remedy, Seller may elect, in its sole discretion, to have the Assets reverted back to Seller and Buyer shall no longer have any right, title or interest in the Assets. For purposes of this Section 11.1 a change in control shall mean (a) any person (excluding current beneficial owners of five percent (5%) or more of Synthetic's outstanding common stock) becomes the beneficial owner (as term is defined in the Securities Exchange Act of 1934) directly or indirectly, of securities representing more than fifty percent (50%) of the total voting power of Buyer's (or Buyer's or Synthetic's, if Buyer is a wholly owned subsidiary of Synthetic) shares; or (b) within a twelve (12) month period, there is a change in the composition of the Board of Directors as a result of which fewer than a majority of the then directors are Incumbent Directors. Incumbent Directors shall mean directors who are either directors of the Seller at least twelve (12) months prior to such change in composition or are elected by the Board of Directors with the affirmative vote of a majority of the Incumbent Directors at the time of election. At any time after the thirty (30) month or thirty-six (36) month periods in this Section 11.1, Seller may request from Buyer documentation that Buyer has initiated toxicology studies in a non-rodent model under the Program or that Buyer has filed an IND under the Program. Within fifteen (15) days after such a request from Seller, Buyer shall provide such documentation to Seller. If pursuant to this Section 11.1 the Assets revert to Seller, then Section 9.1 shall apply to the Confidential Information obtained by Buyer from Seller (exclusive of any improvements or enhancements made to the Assets by Buyer) as though Buyer was the Seller and Seller was the Buyer for purposes of Section 9.1.



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11.2 Procedure upon Unwind. In the event of an unwind pursuant to Section 11.1 hereof, written notice thereof shall forthwith be given to the other parties hereto and the Buyer shall immediately execute and deliver to Buyer, a Bill of Sale and Assignment, in substantially the same form as annexed hereto as Exhibit F (other than to reflect Buyer as the assignor and Seller as the assignee), and a Recordable Patent Assignment, in substantially the form annexed hereto as Exhibit H (other than to reflect Buyer as the assignor and Seller as the assignee), assigning all of Buyer's right, title and interest in the Assets and intellectual property originally conveyed hereunder, to Seller, and from and after the date of delivery of the written notice, Buyer's interest in the such assets and intellectual property rights shall terminate. Such assignment shall be in at least all of the jurisdictions set forth on Exhibit B. If the transactions contemplated by this Agreement is unwound Buyer will redeliver to Seller all documents, work papers and other material of the Seller relating to the transactions contemplated hereby that the Seller has delivered to the Buyer whether so obtained before or after the execution hereof.

## ARTICLE XII

### TERMINATION

12.1 Right To Terminate. This Agreement may be terminated at any time prior to the Closing:

- (a) by mutual written agreement of Seller and Buyer;
- (b) by the Seller if the Closing shall not have been consummated on or before the thirtieth day after the execution of this Agreement; provided, however, that the right to terminate this Agreement under this Section 12.1(b) shall not be available to the Seller if the failure to fulfill any obligation under this Agreement by Seller has been the cause of, or resulted in, the failure of the Closing to occur on or before such date; or
- (c) by the Buyer at any time.

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The party desiring to terminate this Agreement pursuant to Section 12.1 shall give notice of such termination to the other party.

12.2 Effect of Termination.

(a) If this Agreement is terminated as permitted by Section 12.1(c), such termination shall be without liability of either party to the other party to this Agreement except that Buyer shall be entitled to the prompt reimbursement by Seller of one half (Fifty Thousand Dollars) of the cash payment made to Seller under Section 2.4 of this Agreement and any fees paid by Buyer pursuant to Section 2.3 of this Agreement; provided further that if such termination shall result from the failure of Seller to fulfill its obligations under this Agreement then Buyer shall be entitled to the prompt reimbursement by Seller of the entire One Hundred Thousand Dollars (\$100,000) paid to Seller under Section 2.4 of this Agreement in addition to reimbursement of any fees paid by Buyer pursuant to Section 2.3 of this Agreement.

ARTICLE XIII

GENERAL PROVISIONS

13.1 Notices. All notices, requests, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given or made as follows: (i) if sent by registered or certified mail in the United States return receipt requested, upon receipt; (ii) if sent by nationally recognized overnight air courier, one (1) business day after mailing; (iii) if sent by facsimile transmission or electronic mail, with a copy mailed on the same day in the manner provided in clauses (i) or (ii) of this Section 13.1, when transmitted and receipt is confirmed; and (iv) if otherwise actually personally delivered, when delivered, in each case if addressed:

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(a) in the case of Synthetic or Buyer to:

Synthetic Biologics, Inc.

617 Detroit Avenue, Suite 100

Ann Arbor, Michigan 48104

Facsimile: (734) 332-7878

Attention: Jeffrey L. Riley

Email Address: jriley@syntheticbiologics.com

with a copy (which shall not constitute notice) to:

Gracin & Marlow, LLP

405 Lexington Avenue, 26thFloor

New York, New York 10174

Attention: Leslie Marlow, Esq.

Facsimile: (212) 208-4657

Email Address: lmarlow@gracinmarlow.com

(b) in the case of Seller to:

Prev ABR LLC

7272 Wisconsin Avenue, Suite 300

Bethesda, Maryland 20814

Attention: R Michael Floyd

Facsimile: (301) 986 4811

Email Address:mfloyd@lsmgrp.com

or to such other address or to such other person as Buyer or Seller shall have last designated by written notice given as herein provided.

13.2 Modification. This Agreement and the Exhibits and Schedules annexed hereto contain the entire agreement between the parties hereto and there are no agreements, warranties or representations with respect to the subject matter hereof which are not set forth herein. All prior negotiations, agreements and understandings are superseded hereby. This Agreement may not be modified or amended except by an instrument in writing duly signed by or on behalf of the parties hereto.

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13.3 Governing Law. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Michigan applicable to agreements made and to be performed entirely within the State. Seller hereby irrevocably consents to the jurisdiction of any Michigan State or Federal court located in Michigan over any action or proceeding arising out of any dispute between Seller and Buyer, and irrevocably agrees, in this regard, not to commence any action or proceeding arising out of any dispute between Seller and Buyer in any other jurisdiction. Seller further irrevocably consents to the service of process in any such action or proceeding by the mailing of a copy of such process to it at the address set forth above.

13.4 Binding Effect; Assignment. This Agreement shall be binding upon the parties and inure to the benefit of the successors and assigns of the respective parties hereto. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; provided, however, that Buyer may assign its rights and obligations under this Agreement, without the prior written consent of the other party, to an affiliate or to a successor of the relevant portion of the assigning party's business by reason of merger, sale of all or substantially all of its assets or any similar transaction, provided that such successor agrees in writing to be bound by this Agreement. Any permitted assignee shall assume all obligations of its assignor under this Agreement.

13.5 Counterparts. This Agreement may be executed simultaneously in any number of counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

13.6 Paragraph Headings. The paragraph headings in this Agreement are for convenience of reference only and shall not be deemed to alter or affect any provision hereof.

13.7 Transaction Expenses. Notwithstanding anything else in this Agreement to the contrary, the parties hereto shall each be responsible for the payment of (and shall indemnify and hold the other party or parties hereto harmless against) any and all of its own expenses, including without limitation the fees and expenses of counsel, accountants and other advisers, arising out of or relating directly or indirectly to the transactions contemplated by this Agreement, whether or not such transactions are consummated in whole or in part.

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13.8 Waiver. The waiver of one breach or default hereunder shall not constitute the waiver of any other or subsequent breach or default.

13.9 No Agency. This Agreement shall not constitute either party the legal representative or agent of the other, nor shall either party have the right or authority to assume, create, or incur any liability or any obligation of any kind, express or implied, against or in the name of or on behalf of the other party.

13.10 Knowledge. For purpose of this Agreement, knowledge shall mean Seller's actual knowledge, after reasonable investigation, and the actual knowledge of any employee or member of Seller.

**IN WITNESS WHEREOF**, the parties hereto have duly executed this Agreement the day and date first above written.

**SYNTHETIC  
BIOLOGICS, INC.**

By: /s/ Jeff Riley  
Name: Jeff Riley  
Title: CEO

**PREV ABR LLC**

By: /s/ R. Michael Floyd  
Name: R. Michael Floyd  
Title: Managing Member

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**EXHIBIT A**

INTENTIONALLY OMITTED.

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## EXHIBIT B

### PATENTS AND JURISDICTIONS

Title	MODIFIED BETA-LACTAMASES AND METHODS AND USES RELATED THERETO (P3A)				
Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
EP	24-May-2010	FI-20105572	Lapsed		
PCT	17-May-2011	PCT FI2011/050450	WO partly positive		May-31
Title	MODIFIED BETA-LACTAMASES AND METHODS FOR ITS PREPARATION (P2A)				
Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
FI	21-Jun-2006	20065431	Granted	FI 119190	21-Jun-26
PCT	21-Jun-2007	PCT/FI2007/050372	WO positive		21 Jun 2026 FI
National filings	21-Dec-2008				
	NON-SPORULATING BACILLUS SUBTILIS, ITS MANUFACTURE AND USE (HOST PATENT)				
Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
FI	6-Nov-2001	20012143	Granted	FI 112666	11-Jun-21
EP	3-May-2004	02774801.1-2	pending		11-May-22
US	5-May-2004	10/494,411	Granted	US 2005/0158843	1-Oct-24

#### Patents Costs

HOST Patent	600
Response to Host Action	3,900
Response to EPO	1,800

#### National Phase of PCT P3A:

Aus	3,250
Canada	3,250
India	3,250
South Africa	3,250
Euro PCT (EP)	5,700
Brazil	4,000
China	4,250
Japan	5,800
South Korea	4,650
Russia	4,400
USA	4,250
Total	52,350





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## **EXHIBIT C**

### **ESCROW AGREEMENT**

ESCROW AGREEMENT, dated November \_\_, 2012, by and between by and between SYNTHETIC BIOLOGICS, INC, a Nevada corporation having its principal place of business at 617 Detroit Street, Suite 100, Ann Arbor, Michigan 48104 (the "Pledgee"), PREV ABR LLC, a Maryland limited liability company having its principal place of business at 7272 Wisconsin Avenue, Suite 300, Bethesda, Maryland 20814 (the "Pledgor") and Gracin & Marlow, LLP, attorneys at law, a New York limited liability partnership with an address at 405 Lexington Avenue, 26<sup>th</sup> Floor, New York, New York 10174, as escrow agent (the "Escrow Agent").

WHEREAS, Pledgor is a party to an Asset Purchase Agreement, dated the date hereof (the "Asset Purchase Agreement"), pursuant to which Pledgor is receiving shares of common stock of Pledgee;

WHEREAS, the Pledgor wishes to pledge Three Hundred Seventy Five Thousand (375,000) shares of the common stock of Pledgee (the "Shares") to be held in escrow and released to the parties in accordance with the terms hereof (the Shares are hereinafter referred to as the "Escrowed Items");

WHEREAS, the Pledgee and Pledgor wish for the Escrowed Items to be deposited with the Escrow Agent pursuant to the terms of this Escrow Agreement; and

WHEREAS, the Escrow Agent is willing to act as escrow agent pursuant to the terms of this Escrow Agreement with respect to the Escrowed Items;

NOW THEREFORE, in consideration of the premises and the covenants and agreements set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. Establishment of Escrow Account.

(a) Deposit into Escrow. The Pledgor hereby instructs the Pledgee to deposit the Escrowed Items with the Escrow Agent on the date hereof.

(b) Acceptance. Upon receipt of the Escrowed Items, the Escrow Agent agrees to hold the Escrowed Items in accordance with the terms and conditions of this Escrow Agreement (the “Escrow”).

2. Release from Escrow. Upon receipt of joint written instructions executed by the Pledgor, and Pledgee, the Escrow Agent shall deliver and release the number of shares of common stock being held as part of the Escrowed Items designated in such joint written instructions in the amounts and to each person or entity specified in the joint written instructions. If joint written instructions for all of the Escrowed Items are not provided to the Escrow Agent prior to the six (6) month year anniversary of execution of this Agreement and the Escrow Agent has not received a copy of any notice of a Claim from Pledgee under Section 8.2 of the Asset Purchase Agreement, the Escrow Agent shall deliver any remaining Escrowed Items to Pledgor. If at any time Pledgee and/or Pledgor objects to a distribution requested by the other, then the Escrow Agent will not release the Escrowed Items but will continue to hold the Escrowed Items until directed to cause the delivery of the Escrowed Items either: (i) by joint written notice to the Escrow Agent by the Pledgor and Pledgee (which may be signed in counterparts); (ii) a final order of the applicable arbitrator or court unless such order is appealed and execution on such order is stayed, in which case a final order of the court considering such appeal or such motion is vacated; or (iii) otherwise required by laws or court order..

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3. Termination of this Escrow Agreement. This Escrow Agreement shall terminate when the Escrowed Items shall have been distributed as above provided subject to the provisions of Section 4 which shall survive any such termination.

4. Rights and Duties of Escrow Agent.

(a) Duties Limited. The Escrow Agent undertakes to perform only such duties as are expressly set forth herein, which duties, as hereinabove set forth in Sections 1, 2 and 3 hereof, shall terminate upon the release of the Escrowed Items as contemplated above. The parties hereto acknowledge that the duties to be performed by the Escrow Agent hereunder are of a ministerial nature only, and that the Escrow Agent shall not be liable for any error, omission or action taken by it unless such error, omission or action was the result of the Escrow Agent's gross negligence or willful default.

(b) Reliance. The Escrow Agent may rely upon, and shall be protected in acting or refraining from acting upon, any written notice, instruction or request furnished to it hereunder and believed by it to be genuine and to have been signed or presented by the Pledgee and Pledgor, provided that any modification of this Escrow Agreement shall be required to be signed by the Pledgee, Pledgor and the Escrow Agent.

(c) Good Faith. The Pledgee and Pledgor shall jointly indemnify the Escrow Agent and hold it harmless from and against any loss, liability or expense incurred without gross negligence or bad faith on its part, arising out of or in connection with the Escrow Agreement, including the costs and expenses of defending itself against any such claim or liability. The Escrow Agent may consult with counsel of its own choice, and shall have full and complete authorization and no liability for any action taken or suffered by it hereunder in good faith and in accordance with the opinion of such counsel.

(d) Disputes. It is understood and agreed that should any dispute arise, the Escrow Agent is authorized and directed to retain the Escrowed Items or deposit them with a court of competent jurisdiction, until the dispute shall have been settled either by mutual written agreement of the parties concerned or a by a final order, decree or judgment of a court of competent jurisdiction after the time for appeal has expired and no appeal has been perfected, but the Escrow Agent shall be under no duty whatsoever to institute or defend any such proceedings. In addition, the Escrow Agent is acting, and may continue to act, as counsel to the Pledgee in connection with the subject transaction, including in connection with any dispute as to the proper application of the Escrowed Items, whether or not the Escrowed Items are being held by the Escrow Agent or have been delivered to a successor escrow agent or a court of competent jurisdiction.

5. Resignation; Successor Escrow Agent.

(a) Resignation. The Escrow Agent may resign at any time by giving five days' notice of such resignation to the Pledgee and Pledgor. Thereafter, such original Escrow Agent shall have no further obligation hereunder except to hold the Escrowed Items. In such event, the original Escrow Agent shall refrain from taking any action until it shall receive joint written instructions from the Pledgee and Pledgor designating a successor escrow agent. Upon receipt of such instructions, the Escrow Agent shall promptly deliver the Escrowed Items to such successor escrow agent and shall thereafter have no further obligations hereunder. Notwithstanding the foregoing, the Escrow Agent in its sole discretion may at any time after its resignation deposit the Escrowed Items with a court of competent jurisdiction.

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(b) Successor Escrow Agent. The Pledgee and Pledgor together shall have the right to terminate the appointment of the Escrow Agent hereunder by giving notice in writing of such termination to the Escrow Agent, specifying the date upon which such termination shall take effect. In the event of such termination, the Pledgee and Pledgor agree that they will jointly appoint a successor escrow agent at or before the time such notice becomes effective, and the Escrow Agent hereby agrees that it shall turn over and deliver the Escrowed Items to such successor escrow agent. Upon delivery of the Escrowed Items, the Escrow Agent shall be discharged of any further duties under this Escrow Agreement.

6. Fees and Expenses of the Escrow Agent. The Pledgee and Pledgor agree, jointly and severally, to (i) pay the Escrow Agent Two Thousand Five Hundred Dollars (\$2,500) upon execution of this Escrow Agreement; and (ii) reimburse the Escrow Agent for all necessary expenses, disbursements and advances (including reasonable attorneys' fees) incurred or made by it in connection with carrying out its duties hereunder. The liability of the Pledgee and Pledgor under this Section 6 shall be joint and several.

7. Waivers and Modifications. This Escrow Agreement may be amended, modified, extended, superseded or canceled, and any of the terms, covenants, representations, warranties or conditions hereof may be waived, only by a written instrument executed by all of the parties hereto. The failure of any party at any time or times to require performance of any provision hereof shall in no manner affect the right of such party at a later time to enforce the same. No waiver by any party of the breach of any term, covenant, representation or warranty contained in this Escrow Agreement as a condition to such party's obligation hereunder shall release or affect any liability resulting from such breach, and no waiver of any nature, whether by conduct or otherwise, in anyone or more instances, shall be deemed to be construed as a further or continuing waiver of any such condition or breach, a waiver of any other condition or a waiver of any breach of any other condition, term, covenant, representation or warranty of this Escrow Agreement.

8. Notices. Any notice, demand or other communication required or permitted to be given pursuant to this Escrow Agreement shall have been sufficiently given for all purposes (a) if delivered personally to the party or to an executive officer of the party to whom such notice, demand or other communication is directed on the date of such personal delivery; or (b) if sent by registered or certified mail, postage prepaid, addressed to the party to whom such notice, demand or other communication is directed at its address set forth below on the fifth business day after the date on which it was deposited in a regularly maintained receptacle for the deposit of United States mail; or (c) if sent by facsimile transmission, or electronic mail, with a copy mailed on the same day by first class mail, postage prepaid.

If to the Pledgee:

Synthetic Biologics, Inc.

617 Detroit Street

Ann Arbor, Michigan, 48104

Facsimile: 734-332-7878

Email: jriley@syntheticbiologics.com

Attention: Jeffrey Riley

If to Pledgor:

Prev ABR LLC

7272 Wisconsin Avenue

Bethesda, Maryland 20814

Facsimile: (301) 986 4811

Email Address: mfloyd@lsmgrp.com

Attention: R Michael Floyd

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**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

If to the Escrow Agent:

Gracin & Marlow, LLP

405 Lexington Avenue, 26<sup>th</sup> Floor

New York, New York 10174

Facsimile: (212) 208-4657

Attention: Leslie Marlow

9. No Assignment. This Escrow Agreement shall be binding upon the successors and permitted assigns of the parties hereof. No assignment of any rights or delegation of any obligations provided for herein may be made by any party hereto without the express written consent of all other parties hereto, except for the provisions of Section 5 respecting successor escrow agents.

10. Entire Agreement. This Escrow Agreement contains the entire agreement among the parties hereto with respect to the subject matter hereof, and there are no representations, warranties, understandings or agreements other than those expressly set forth herein.

11. Further Assurances. If at any time any party hereto shall consider or be advised that any further agreements, assurances or other documents are reasonably necessary or desirable to carry out the provisions hereof and the transactions contemplated hereby, the parties hereto shall execute and deliver any and all such agreements or other documents, and do all things necessary or appropriate to carry out fully the provisions hereof.

12. Governing Law. The validity of this Escrow Agreement and the rights, obligations and relations of the parties hereunder shall be construed and determined under and in accordance with the laws of the State of New York without giving effect to the conflict of laws rules of such State. ALL PARTIES HEREBY SUBMIT TO THE JURISDICTION OF THE STATE OF NEW YORK IN CONNECTION WITH ANY LEGAL PROCEEDINGS COMMENCED IN CONNECTION WITH THIS ESCROW AGREEMENT.

13. Counterparts. This Escrow Agreement may be executed in counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument.



14. Section Headings. The section headings contained in this Escrow Agreement are inserted for purposes of convenience of reference only and shall not affect the meaning or interpretation hereof.

IN WITNESS WHEREOF, the parties have executed this Escrow Agreement as of the date first above written.

SYNTHETIC  
BIOLOGICS,  
INC.

By:  
Name:  
Title:

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

PREV ABR  
LLC

By:  
Name:  
Title:

ESCROW  
AGENT:

GRACIN &  
MARLOW,  
LLP

By:  
Name:  
Leslie  
Marlow  
Title:  
Partner

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

## **EXHIBIT D**

### **MILESTONE PAYMENTS**

EACH OF THE FOLLOWING PAYMENTS OR STOCK ISSUANCES SHALL BE DUE AND PAYABLE OR ISSUED, AS THE CASE MAY BE, WITHIN 5 BUSINESS DAYS AFTER ACHIEVING THE RESPECTIVE MILESTONE AND AFTER RECEIPT OF NECESSARY REGULATORY APPROVALS

Filing of an IND: USD \$\*\*\*\*\* in cash

Initiation of Phase 1 (first subject dosed): USD \$\*\*\*\*\* 50% of which will be paid in cash and the remaining 50% to be paid in the stock equivalent. At Seller's option, the full milestone may be paid in stock.

Commencement of Phase 2 (first subject dosed): USD \$\*\*\*\*\* 50% of which will be paid in cash and the remaining 50% to be paid in the stock equivalent. At Seller's option, the full milestone may be paid in stock.

Commencement of Phase 3 (first patient dosed): USD \$\*\*\*\*\* 50% of which will be paid in cash and the remaining 50% to be paid in the stock equivalent. At Seller's option, the full milestone may be paid in stock.

BLA Filing: USD \$\*\*\*\*\* 50% of which will be paid in cash and the remaining 50% to be paid in the stock equivalent. At Seller's option, the full milestone may be paid in stock.

Filing BLA in any other territory: USD \$\*\*\*\*\* 50% of which will be paid in cash and the remaining 50% to be paid in the stock equivalent. At Seller's option, the full milestone may be paid in stock.

BLA Approval: USD \$\*\*\*\*\* 50% of which will be paid in cash and the remaining 50% to be paid in the stock equivalent. At Seller's option, the full milestone may be paid in stock.

BLA Approval in any other territory: USD \$\*\*\*\*\* 50% of which will be paid in cash and the remaining 50% to be paid in the stock equivalent. At Seller's option, the full milestone may be paid in stock.

Any and all payments in stock contemplated in this Agreement shall be subject to prior approval of the NYSE MKT LLC or any other exchange on which Synthetic's securities shall be listed. If such exchange approval is not received, such payment shall be made in each case based upon the average of the opening and closing prices of Synthetic's stock on the date such milestone is achieved (or in the event the milestone is achieved on a date in which the stock market is closed on the next business date for such market). Seller acknowledges that its right to be paid in stock is subject to a limitation such that the aggregate maximum number of shares of Synthetic's stock that may be issued in accordance with the terms of this Agreement, including but not limited to all issuances set forth on this Exhibit D and the 625,000 shares to be issued in accordance with Section 2.4(b) of this Agreement, shall not exceed 19.99% of Synthetic's outstanding number of shares of common stock on the date of execution of this Agreement; provided, however, that Synthetic shall have the right, in its sole discretion, to obtain shareholder approval to issue shares of stock in excess of the 19.99% cap in accordance with all applicable exchange requirements and if such shareholder approval is obtained then Synthetic shall have the right, in its sole discretion, to make such payments in shares of its common stock. For purposes of the Asset Purchase Agreement all of the countries located in Europe shall be one territory, Korea, Japan and India shall be one territory, South America including Brazil shall be one territory and The United States and Canada shall be one territory.

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

**EXHIBIT E**

SECTION 2.5

I.R.C. SECTION 1060 ALLOCATION

For tax purposes, the Seller and Buyer shall allocate the purchase price as follows:

1. 80% to the patents and patent applications relating to the CDAD program;
2. 10% to the preclinical package for P1A, P2A and P3A
3. 10% for the master cell banks or P1A, P2A, and P3A

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

## **EXHIBIT F**

### **ASSIGNMENT AND BILL OF SALE**

**KNOW ALL MEN BY THESE PRESENTS**, that Synthetic Biologics, Inc., a Nevada corporation having its principal place of business at 617 Detroit Avenue, Suite 100, Ann Arbor, Michigan 48104 ("Buyer"), for and in consideration of the receipt of the consideration set forth in the Asset Purchase Agreement executed on the date hereof between the Buyer and PREV ABR LLC, a Maryland limited liability company, having its principal place of business at 7201 Wisconsin Avenue, Bethesda, Maryland 20814 ("PrevAb") and other good and valuable consideration in full payment for the assets hereinafter specified, the receipt and sufficiency of which is hereby acknowledged, has granted, bargained, sold and by these presents does grant, bargain, sell, convey and deliver to Buyer, and its successors and assigns, the following assets:

PrevAb's CDAD program including any and all of the following assets of PrevAb, including any and all rights and benefits constituting and relating to PrevAb's  $\beta$ -lactamase technology and all other biomedical or pharmaceutical technologies of PrevAb and all  $\beta$ -lactamase products detained and/or developed with the aforementioned technologies, including without limitation the lead P1A, P2A and P3A-based products in preclinical and clinical phases (the "Program") and all tangible and intangible intellectual property and know how exclusively related thereto including the following:

(a) all methods and data sets, and all technical documentation pertaining to the Program, including any specifications, flow charts, diagrams, lab results and any and all notes, all inventor notebook pages specific to the Program, plans and other documentation describing problems, future directions or other matters exclusively related to the Program;

(b) (i) all patents, patent rights, copyrights, trademarks, trademark rights, tradenames, tradename rights and patent, copyright or trademark applications exclusively respecting the Program and related intellectual property; (ii) all reissues, reexaminations, extensions, continuations, continuations-in-part, continuing prosecution applications, requests for continuing examinations, divisions and registrations of any item in any of the foregoing categories; (iii) foreign counterparts of any of the foregoing; (iv) all patent and patent applications claiming any right of priority to or through the patent applications of the patents listed on Exhibit B hereto; (v) all rights to apply in all countries of the world for patents certificates of invention, utility models, industrial design protections, design patent protections, or other governmental grants or issuances of any type related to any item in any of the foregoing categories (i) through (v), including, without limitation, under the Paris Convention for the Protection of Industrial Property, the International Patent Cooperation Treaty, or any other convention, treaty, agreement, or understanding; (vi) all invention, invention disclosures and discoveries described in any of the patents listed on Exhibit B hereto that are

included in any claim in such patents, and/or are subject matter capable of being reduced to a patent claim in a reissue or reexamination proceeding brought on any of the patents; (vii) all causes of action (whether known or unknown, or whether currently pending, filed or otherwise) and other enforcement rights under, or on account of, any of the patents and/or rights (as described on Exhibit B); (viii) all rights to collect royalties and other payments under or on account of the patents or any item in any categories (i) through (vii); (ix) all ideas, know-how, trade secrets, inventions, invention disclosures, discoveries, technology, designs and any other proprietary rights which Seller owns, in each case with respect to any of the above, pertaining exclusively to the Program (collectively, "Proprietary Rights"); and (x) a list of upcoming filings, all US Patent and Trademark Office and other patentability assessments;

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

- (c) all cGMP and non-cGMP material and master call banks of P1A, P2A and P3A and all other tangible assets related thereto;
- (d) any and all U.S. and international investigational new drug applications (IND) and pre-INDs of Seller;
- (e) all grants and other non-dilutive funding sources associated with the CDAD Program if legally assignable or transferable by Seller to Buyer;
- (f) all scientific consulting agreements with the members of PrevAb's scientific advisory board;
- (g) information and know-how related to research, development, manufacture and/or business (commercial/marketing), used or held for use in connection with the Program;
- (k) any and all health and regulatory registrations, approvals and/or applications and related documentation for the Program;
- (l) any and all drugs, formulations and user devices, applications, and safety data; and
- (m) all other information, documentation and goodwill relating to the Program; and
- (n) all regulatory files (paper and electronic) or so-called regulatory files and records of communications and filings with any and all regulatory authorities in both paper and electronic form.

**TO HAVE AND TO HOLD** the said assets unto Buyer, its successors and assigns, to and for its own use, forever.



1. PreVAb warrants to Buyer its successors and assigns, that at the time of delivery of this Bill of Sale to Buyer, PreVAb has good and valid title to said assets to the same extent assigned to it by PreVAb and good and lawful right to grant, bargain, sell, convey and deliver said assets as aforesaid and that the title to said assets are as of the date of delivery of said assets to Buyer, free and clear of all claims, liens, pledges, security interests and other encumbrances of any nature whatsoever (“Liens”). PreVAb further warrants that upon delivery of this Bill of Sale to Buyer, Buyer shall have good and valid legal title to the assets described in this Bill of Sale, free and clear of all claims, liens, pledges, security interests and other encumbrances of any nature whatsoever. The foregoing is subject to any Liens that were unknown to PreVAb but were in effect at the time of the sale of the Assets to Buyer by PreVAb.

2. PreVAb agrees to execute and deliver to Buyer such other documents and instruments of sale, conveyance, transfer and assignment, satisfactory in form and substance to Buyer, as may be reasonably requested by Buyer in order to effect PreVAb’s assignment of assets hereunder.

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

**IN WITNESS WHEREOF**, the parties hereto have caused these presents to be executed as of the \_\_\_\_ day of November, 2012.

PREVABR  
LLC

By:  
Name:  
Title:

SYNTHETIC  
BIOLOGICS,  
INC.

By:  
Name;  
Title:

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

**Exhibit A**

Intentionally Omitted.

Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.

**Exhibit B**

Title MODIFIED BETA-LACTAMASES AND METHODS AND USES RELATED THERETO (P3A)

Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
EP	24-May-2010	FI-20105572	Lapsed		
PCT	17-May-2011	PCT FI2011/050450	WO partly positive		May-31

Title MODIFIED BETA-LACTAMASES AND METHODS FOR ITS PREPARATION (P2A)

Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
FI	21-Jun-2006	20065431	Granted	FI 119190	21-Jun-26
PCT	21-Jun-2007	PCT/FI2007/050372	WO positive		21 Jun 2026 FI
National filings	21-Dec-2008				

NON-SPORULATING BACILLUS SUBTILIS, ITS MANUFACTURE AND USE (HOST PATENT)

Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
FI	6-Nov-2001	20012143	Granted	FI 112666	11-Jun-21
EP	3-May-2004	02774801.1-2	pending		11-May-22
US	5-May-2004	10/494,411	Granted	US 2005/0158843	1-Oct-24

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

**EXHIBIT G**

INTENTIONALLY OMITTED.

Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.

## EXHIBIT H

### ASSIGNMENT

**PREV ABR LLC** with offices at **7272 Wisconsin Avenue, Suite 300, Bethesda, Maryland 20814**, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, confirm that we have freely assigned, and do hereby freely assign, and transfer to **SYNTHETIC BIOLOGICS, INC.**, a corporation, with offices at **617 Detroit Street, Ann Arbor, Michigan 48104**, and its successors, assigns and legal representatives, all hereinafter referred to as the ASSIGNEES: (1) our entire right, title and interest for the United States and in all countries, in and to any and all inventions, discoveries and applications which are disclosed in the applications listed in “**Schedule A**”, including any subsequently filed applications, which claim priority to, and benefit of, the applications listed on “**Schedule A**”, including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof and any substitute applications therefore; (2) the full and complete right to file patent applications in the name of the ASSIGNEE, its designee, or in my name as the ASSIGNEE, or its designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right, title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.

We hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in the United States and throughout the world to the ASSIGNEES of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, sale and transfer not been made.

We agree, at any time, upon the request of the ASSIGNEES, to execute and to deliver to the ASSIGNEES any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries, or applications and divisions, continuations, renewals, revivals, reissues, reexaminations and extensions thereof.

We further agree at any time to execute and to deliver upon request of the ASSIGNEES such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect the rights of the ASSIGNEES under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

We hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

We further covenant that ASSIGNEES will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEES or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

Date:

Signature of:

On Behalf of: **PREV ABR LLC**

State of \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me, the undersigned notary public, personally appeared \_\_\_\_\_ proved to me through satisfactory evidence of identification, which was a \_\_\_\_\_, to be the person whose name is signed on this document and who swore or affirmed to me that the contents of this document are truthful and accurate to the best of his/her knowledge and belief.

Notary Public

My commission expires



**Portions herein identified by [\*\*\*\*\*] have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, as amended. A complete copy of this document has been filed separately with the Securities and Exchange Commission.**

Schedule A

Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
EP	24-May-2010	FI20105572	Lapsed		
PCT	17-May-2011	PCT FI2011/050450	WO partly positive		May-31

Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
FI	21-June-2006	20065431	Granted	FI119190	21-June-26
PCT	21-Jun-2007	PCT/FI2007/050372	WO positive		21 Jun 2026 FI
National filings	21-Dec-2008				

Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
FI	28-Nov-2006	20065757	Granted	FI119678	28-Dec-26
PCT	21-Nov-2007	PCT7FI2007/05062	WO positive		28 Dec 2028 FI
National Filings	28-May-2009				

Country	Date of Filing	Application No.	Status	Patent No.	Expiry Date
FI	6-Nov-2001	20012143	Granted	FI112666	11-June-21
EP	3-May-2004	02774801.1-2	Pending		11-May-22
US	5-May-2004	10/494,411	Granted	US2005/0158843	1-Oct-24

Synthetic Biologics to Acquire Clinical-Stage *C. difficile* Infectious Disease Program

*-- Novel Oral Biologic Designed to Protect Patients from C. difficile Infection*

*Associated with Systemic Antibiotics --*

**For Immediate Release**

**Rockville, MD, November 12, 2012** – Synthetic Biologics, Inc. (NYSE MKT: SYN), a developer of synthetic biologics and innovative medicines for serious infections and diseases, announced today that the Company has entered into an agreement with Prev AbR LLC to acquire its clinical-stage and related beta-lactamase assets targeted for the prevention of *Clostridium difficile* (*C. diff*) infection, the leading cause of hospital acquired infections (HAI), that may occur secondary to treatment with antibiotics. The assets include a pre-Investigational New Drug (IND) package, Phase I and Phase II clinical data, manufacturing process data and all issued and pending U.S. and international patents intended to support an IND and Biologic License Application (BLA) with the FDA.

Beta-lactamase enzymes have the ability to degrade beta-lactam antibiotics that may be excreted into the GI tract. Beta-lactam antibiotics are a mainstay in hospital infection management and include both penicillins and cephalosporins. In 2011, an estimated 8.7 million Americans were administered intravenous beta-lactam antibiotics.<sup>[1]</sup> Utilizing the acquired biologic compounds, Synthetic Biologics intends to develop and commercialize a proprietary oral beta-lactamase enzyme product candidate, SYN-004. When co-administered with beta-lactam antibiotics in a hospital setting, it is expected that SYN-004 can preserve a patient's gastrointestinal (GI) microflora, thus preventing opportunistic *C. diff* infection (CDI).

*C. diff* Infection

In 2009, aggregate costs associated with CDI-related stays in the hospital were \$8.2 billion in the U.S.<sup>[2]</sup> CDI is a global HAI in which the toxins produced by *C. diff* bacteria result in diarrhea (*C. diff*-associated diarrhea (CDAD)),

and in the most serious cases, pseudomembranous colitis (erosion of the GI tract) that can lead to death. A major, unintended risk in the use of systemic antibiotics is the development of CDI, which may alter the balance of the GI microflora that normally protect the GI tract from *C. diff* overgrowth and infection. Other risk factors for CDI include hospitalization, prolonged length of stay, underlying illness, immune-compromising conditions including the administration of chemotherapy, and advanced age.

CDI is a widespread and often drug resistant infectious disease, resulting in more than 337,000 hospitalizations and 30,000 deaths in the U.S. during 2009.<sup>[3]</sup> CDI has surpassed methicillin-resistant staphylococcus aureus (MRSA) as the most frequent infection acquired in the hospital. It has recently been reported by The Centers for Disease Control and Prevention that the current number of CDI cases may be as high as 500,000 annually in the U.S. Controlling the spread of CDI has proven challenging, as the *C. diff* spores are easily transferred to patients via the hands of healthcare personnel. There is currently no vaccine or approved product for the prevention of *C. diff* infection.

Synthetic Biologics' Product Candidate: SYN-004

The acquisition includes the clinical-stage and related beta-lactamase assets, P1A, P2A and P3A (now known as SYN-004). Phase I studies of P1A, the first compound in the series, showed acceptable safety and tolerability. In addition, two Phase II clinical studies demonstrated its ability to preserve GI microflora in hospitalized patients treated with intravenous ampicillin or the combination of piperacillin and tazobactam.

SYN-004 has a broader spectrum of activity against beta-lactam antibiotics, including both penicillins and most cephalosporins. Due to the structural similarities between P1A and SYN-004, and based on previous discussions with the FDA, it is anticipated that the preclinical and manufacturing data collected on P1A may be used in support of an IND for Synthetic Biologics' new product candidate, SYN-004, for the prevention of CDI.

"We are pleased to add the *C. diff* program to our infectious disease pipeline that also includes an acinetobacter infection program. The need for an alternative mechanism of action to prevent the devastating effects of *C. diff* infection is critical. It is important to both improve patient care and to combat the burden of rising medical costs associated with hospital-acquired infections such as *C. diff*," stated Jeffrey Riley, Chief Executive Officer of Synthetic Biologics. "Current therapies to treat *C. diff* are not universally effective and efforts to stop the spread of the disease have proven challenging. With regulatory discussions already initiated, we are designing a regulatory pathway for our new product, SYN-004, that is intended to lead to a Phase II clinical trial as soon as possible. We look forward to reporting progress from our *C. diff* program when milestones are achieved."

#### **About Synthetic Biologics, Inc.**

Synthetic Biologics is a biotechnology company focused on the development of product candidates for serious infections and diseases. Synthetic Biologics is developing a biologic for the prevention of *C. diff* infection, and a series of monoclonal antibodies (mAbs) for the treatment of serious infectious diseases, including *Acinetobacter*. The Company is also developing a synthetic DNA-based therapy for the treatment of pulmonary arterial hypertension (PAH). In addition, the Company is developing a drug candidate for the treatment of relapsing-remitting multiple sclerosis (MS) and cognitive dysfunction in MS, and designing a clinical development pathway for the treatment of amyotrophic lateral sclerosis (ALS). For more information, please visit Synthetic Biologics' website at [www.syntheticbiologics.com](http://www.syntheticbiologics.com).

*This release includes forward-looking statements on Synthetic Biologics' current expectations and projections about future events. In some cases forward-looking statements can be identified by terminology such as "may," "should," "potential," "continue," "expects," "anticipates," "intends," "plans," "believes," "estimates," and similar expressions. These statements are based upon current beliefs, expectations and assumptions and are subject to a number of risks and uncertainties, many of which are difficult to predict and include statements regarding our intention to develop and commercialize a proprietary beta-lactase enzyme product candidate using the acquired assets that will have the desired results, our intention to commence a Phase II clinical trial and to obtain FDA approval of an IND and/or BLA for the new product candidate and the expected size of the market for C. diff therapeutics. The forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those set forth or implied by any forward-looking statements. Important factors that could cause actual results to differ materially from those reflected in Synthetic Biologics' forward-looking statements include, among others, our inability to timely commence or complete the clinical trials consistent with our current expectations, our inability to successfully develop, receive regulatory approvals for or to commercialize a new product candidate to treat C. diff infection, the failure of clinical results for SYN-004 to support the results obtained for P1A or achieve desired results and other factors described in Synthetic Biologics' report on Form 10-K/A for the year ended December 31, 2011 and*

*any other filings with the SEC. The information in this release is provided only as of the date of this release, and Synthetic Biologics undertakes no obligation to update any forward-looking statements contained in this release on account of new information, future events, or otherwise, except as required by law.*

**For further information, please contact:**

Kris Maly

Vice President, Corporate Communication

(734) 332-7800, ext. 22

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<sup>[1]</sup> GlobalData. Beta-lactam Antibiotics Sales - United States of America, 2011. Prepared for Synthetic Biologics, Inc. November 2012.

<sup>[2]</sup> Agency for Healthcare Research and Quality. Healthcare and Cost Utilization Project. Statistical Brief #124. *Clostridium difficile* Infections (CDI) in Hospital Stays, 2009. January 2012. Available at <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb124.pdf>.

<sup>[3]</sup> U.S. Department of Health & Human Services. Agency for Healthcare Research and Quality. January 25, 2012. Available at <http://www.ahrq.gov/news/nn/nn012512.htm>. Accessed November 5, 2012.