

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

**SCHEDULE TO
TENDER OFFER STATEMENT UNDER SECTION 14(d)(1) OR 13(e)(1)
OF THE SECURITIES EXCHANGE ACT OF 1934**

ORGANOVO HOLDINGS, INC.

(Name of Subject Company (Issuer) and Filing Person (Offeror))

WARRANTS TO PURCHASE COMMON STOCK
(Title of Class of Securities)

68620A 104
(CUSIP Number of Common Stock Underlying Warrants)

Keith Murphy
Chief Executive Officer and President
6275 Nancy Ridge Drive
San Diego, California 92121
Phone: (858) 550-9994

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications on Behalf of Filing Person)

WITH COPY TO:
Jeff Thacker, Esq.
DLA Piper LLP (US)
4365 Executive Drive, Suite 1100
San Diego, California 92121
Tel: (858) 677-1400
Fax: (858) 677-1401

CALCULATION OF FILING FEE:

Transaction valuation ⁽¹⁾	Amount of filing fee ⁽¹⁾⁽²⁾
\$34,100,681	\$4,652

- (1) Estimated for purposes of calculating the amount of the filing fee only. An offer to amend and exercise warrants to purchase an aggregate of 14,510,928 shares of common stock (the “**Offer to Amend and Exercise**”), including: (i) outstanding warrants to purchase 1,500,000 shares of the Company’s common stock issued to investors participating in the Company’s bridge financing completed in November 2011; (ii) outstanding warrants to purchase 11,653,678 shares of the Company’s common stock issued to investors participating in the Company’s private placement financings closed on February 8, 2012, February 29, 2012 and March 16, 2012; and (iii) outstanding warrants to purchase 1,357,250 shares of the Company’s common stock issued to investors in the Company’s private placement transactions completed in 2011. The transaction value is calculated pursuant to Rule 0-11 using \$2.35 per share of common stock, which represents the average of the high and low sales price of the common stock on November 13, 2012.
- (2) Calculated by multiplying the transaction value by 0.0001364.

- ☐ Check the box if any part of the fee is offset as provided by Rule 0-11(a)(2) and identify the filing with which the offsetting fee was previously paid. Identify the previous filing by registration statement number or the Form or Schedule and the date of its filing.
- Amount Previously Paid: N/A
Form or Registration Number: N/A

Filing Party: N/A
Date Filed: N/A
- ☐ Check the box if the filing relates solely to preliminary communications made before the commencement of a tender offer.
- Check the appropriate boxes below to designate any transactions to which the statement relates:
- ☐ third party tender offer subject to Rule 14d-1.

☒ issuer tender offer subject to Rule 13e-4.

☐ going private transaction subject to Rule 13e-3.

☐ amendment to Schedule 13D under Rule 13d-2.

Check the following box if the filing is a final amendment reporting the results of a tender offer: ☐

The alphabetical subsections used in the Item responses below correspond to the alphabetical subsections of the applicable items of Regulation M-A promulgated under the federal securities laws.

If applicable, check the appropriate box(es) below to designate the appropriate note provision(s):

- ☐ Rule 13e-4(i) (Cross-Border Issuer Tender Offer)

☐ Rule 14d-1(d) (Cross-Border Third-Party Tender Offer)

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Item 1. SUMMARY TERM SHEET

The information under the heading “Summary of Terms” in the Offer to Amend and Exercise filed as Exhibit (a)(1)(B) to this Schedule TO is incorporated herein by reference.

Item 2. SUBJECT COMPANY INFORMATION

- (a) The name of the subject company (issuer) and filing person (offeror) is Organovo Holdings, Inc., a Delaware corporation (the “**Company**”). The address and telephone number of its principal executive offices are 6275 Nancy Ridge Drive, San Diego, California 92121, telephone (858) 550-9994.
- (b) As of November 13, 2012, the Company has: (i) outstanding warrants to purchase 1,500,000 shares of the Company’s common stock issued to investors participating in the Company’s bridge financing completed in November 2011 (the “**Bridge Warrants**”); (ii) outstanding warrants to purchase 11,653,678 shares of the Company’s common stock issued to investors participating in the Company’s private placement financings closed on February 8, 2012, February 29, 2012 and March 16, 2012 (the “**Investor Warrants**”); and (iii) outstanding warrants to purchase 1,357,250 shares of the Company’s common stock issued to investors in the Company’s private placement transactions completed in 2011 (the “**Private Warrants**” and collectively with the Bridge Warrants and the Investor Warrants, the “**Original Warrants**”). Pursuant to the Offer to Amend and Exercise, the Original Warrants will be amended to reduce the exercise price of the Original Warrants from \$1.00 per share to \$0.80 per share of common stock in cash on the terms and conditions set forth in the Offer to Amend and Exercise. There is no minimum participation requirement with respect to the Offer to Amend and Exercise.
- As of November 13, 2012, the Company had: (i) 47,756,254 shares of common stock outstanding; (ii) outstanding warrants to purchase 20,490,123 shares of common stock (including, the Original Warrants); and (iii) outstanding equity awards to purchase 2,762,253 shares of common stock issued pursuant to the Company’s Amended and Restated 2012 Equity Incentive Plan (the “**Plan**”). In addition, the Company has reserved an additional 3,229,939 shares of common stock for issuance pursuant to the Plan.
- (c) No trading market exists for the Original Warrants. Information about the trading market and price of the Company’s common stock under Section 11: “Trading Market and Price Range of Common Stock” of the Offer to Amend and Exercise is incorporated herein by reference.

Item 3. IDENTITY AND BACKGROUND OF FILING PERSON

- (a) The Company is the filing person and the subject company. The address and telephone number of each of the Company’s executive officers and directors is c/o Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, California 92121, telephone (858) 550-9994.

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Pursuant to General Instruction C to Schedule TO promulgated by the United States Securities and Exchange Commission (the “SEC”), the following persons are executive officers, directors and/or control persons of the Company:

<u>Name</u>	<u>Position(s)</u>
Keith Murphy	Chairman of the Board, Chief Executive Officer, and President
Sharon Collins Presnell	Chief Technical Officer and Executive Vice President of Research and Development
Barry D. Michaels	Chief Financial Officer
Michael Renard	Executive Vice President of Commercial Operations
Eric Michael David, Ph.D.	Chief Strategy Officer
Robert Baltera, Jr.	Director
Andras Forgacs	Director
James T. Glover	Director
Adam K. Stern	Director
Dr. Gabor Forgacs	Control Person

Dr. Gabor Forgacs, a Professor of Biophysics at the University of Missouri, is our scientific founder. He beneficially owns approximately 6,057,741 shares of common stock (approximately 12.7%) based on the Company’s records and its outstanding common stock as of November 13, 2012. Dr. Forgacs is the father of one of the Company’s directors, Andras Forgacs.

Item 4. TERMS OF THE TRANSACTION

- (a) Information about the terms of the transaction under the headings “Summary of Terms” and “Description of Offer to Amend and Exercise” of the Offer to Amend and Exercise is incorporated herein by reference.
- (b) See Item 8 below for a description of the executive officers, directors and affiliates who hold Original Warrants and who will have an opportunity to participate in the Offer to Amend and Exercise on the same terms and conditions as the other holders of Original Warrants.

Item 5. PAST CONTRACTS, TRANSACTIONS, NEGOTIATIONS AND AGREEMENTS.

- (e) See Item 9 below for a description of the Company’s retention of Aegis Capital Corp. to serve as the Warrant Agent for the Offer to Amend and Exercise. Adam K. Stern, one of the Company’s directors, is the Head of Private Equity Banking at Aegis Capital.

The Company entered into a Registration Rights Agreement under which the Company agreed to register the common stock underlying the Bridge Warrants and the Investor Warrants for resale by the holders thereof. A copy of the Registration Rights Agreement is attached as Exhibit (d)(2) to this Schedule TO.

Item 6. PURPOSES OF THE TRANSACTION AND PLANS OR PROPOSALS.

- (a) The information about the purposes of the transaction under Section 2: “Purposes of the Offer to Amend and Exercise and Use of Proceeds” of the Offer to Amend and Exercise is incorporated herein by reference.
- (b) The Company intends to cancel the Original Warrants upon the exercise of the Original Warrants by the holders thereof. Pursuant to the Offer to Amend and Exercise, Original Warrants that are not so exercised will remain outstanding pursuant to their original terms.

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- (c) No plans or proposals described in this Schedule TO or in any materials sent to the holders of the Original Warrants in connection with this Offer to Amend and Exercise relate to or would result in the conditions or transactions described in Regulation M-A, Item 1006(c)(1) through (10), except as follows:

Any holder of Original Warrants who elects to exercise his, her or its Original Warrants will acquire additional shares of common stock of the Company as a result of such exercise. As of November 13, 2012, the Company had 47,756,254 shares of common stock outstanding. The Original Warrants are exercisable for an aggregate of 14,510,928 shares of common stock. Assuming all Original Warrants are exercised, the Company's outstanding shares of common stock would increase to 62,267,182 shares, with the shares issued upon exercise of the Original Warrants representing 23.3% of the then outstanding shares of common stock.

Item 7. SOURCE AND AMOUNT OF FUNDS OR OTHER CONSIDERATION.

- (a) Not applicable.
(b) Not applicable.
(d) Not applicable.

Item 8. INTEREST IN SECURITIES OF THE SUBJECT COMPANY.

- (a) As of November 13, 2012, there are outstanding Original Warrants to purchase an aggregate of 14,510,928 shares of common stock. The Company's executive officers, directors and control persons, as described below, hold the following Original Warrants and will be entitled to participate in the Offer to Amend and Exercise on the same terms and conditions as the other holders of Original Warrants:

<u>Name</u>	<u>Position with the Company</u>	<u>Number of Original Warrants Held</u>	<u>Percentage of Original Warrants Total</u>
Barry D. Michaels	Chief Financial Officer	10,000	*
Eric Michael David	Chief Strategy Officer	20,000	*
Robert Baltera	Director	28,000	*

* Less than 1%

Except as set forth above, none of the Company's other executive officers, directors or control persons hold Original Warrants.

- (b) Except with respect to the Warrant Agent Agreement described in Item 9 below, none of our directors or executive officers participated in any transaction involving the Original Warrants during the past 60 days.

Item 9. PERSONS/ASSETS, RETAINED, EMPLOYED, COMPENSATED OR USED.

- (a) The Company has retained Aegis Capital to act as its Warrant Agent for the Offer to Amend and Exercise pursuant to a Warrant Agent Agreement, attached as Exhibit (d)(1) to this Schedule TO. Aegis Capital, in accordance with the terms of the Warrant Agent Agreement, shall use reasonable commercial efforts to contact holders of the Original Warrants by mail, telephone, facsimile, or other electronic means and solicit their participation in the Offer to Amend and Exercise and to amend and exercise their Original Warrants. Aegis Capital will receive a fee equal to 2% of the cash exercise prices paid by holders of the Original Warrants who participate in the Offer to Amend and Exercise and amend and exercise their Original Warrants. In addition, the Company has agreed to reimburse Aegis Capital for its reasonable out-of-pocket expenses and attorney's fees, including a \$35,000 non-accountable expense allowance. If such expenses and fees exceed \$35,000, Aegis Capital must thereafter provide invoices to the Company prior to seeking reimbursement and must obtain the

Company's prior approval for any individual expenses in excess of \$2,500. The Company has agreed to indemnify Aegis Capital against certain liabilities in connection with the Offer to Amend and Exercise, including certain liabilities under the federal securities laws.

The Company may also use the services of its officers and employees to solicit holders of the Original Warrants to participate in the Offer to Amend and Exercise without additional compensation.

Item 10. FINANCIAL STATEMENTS.

(a) The Company's financial statements are incorporated herein by reference:

- Current Report on Form 8-K/A filed with the SEC on May 11, 2012 containing audited financial statements for the fiscal years ended December 31, 2011 and 2010;
- Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2012, filed with the SEC on May 14, 2012;
- Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2012, filed with the SEC on August 14, 2012; and
- Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2012, filed with the SEC on November 14, 2012.

The full text of the Current Report on Form 8-K/A and the Quarterly Reports on Form 10-Q, as well as the other documents the Company has filed with the Commission prior to, or will file with the Commission subsequent to, the filing of this Tender Offer Statement on Schedule TO, can be accessed electronically on the Commission's website at www.sec.gov. In addition, the Company makes available, free of charge on its website all filings that are made electronically with the SEC. These materials can be found in the "Investors" section of the Company's website at www.organovo.com, by clicking the "SEC Filings" link. Copies of our SEC filings are also available without charge upon written request addressed to: Organovo Holdings, Inc., 6275 Nancy Ridge Dr., San Diego, California 92121; Attn: Corporate Secretary.

(b) None.

Item 11. ADDITIONAL INFORMATION.

- (a)
- (1) Except as set forth in Items 8 and 9 above, there are no present or proposed contracts, arrangements, understandings or relationships between the Company and its executive officers, directors or affiliates relating, directly or indirectly, to the Offer to Amend and Exercise.
 - (2) There are no applicable regulatory requirements or approvals needed for the Offer to Amend and Exercise.
 - (3) There are no applicable anti-trust laws.
 - (4) The margin requirements of Section 7 of the Securities Exchange Act of 1934, as amended, and the applicable regulations are inapplicable.
 - (5) None.
- (b) Not applicable.
- (c) None.

Item 12. EXHIBITS.

The following are attached as exhibits to this Schedule TO:

- (a) (1)(A) Letter to Holders of Original Warrants
- (1)(B) Offer to Amend and Exercise
- (1)(C) Form of Election to Participate and Exercise Warrant
- (1)(D) Form of Notice of Withdrawal
- (1)(E) Form of Bridge Amended Warrant
- (1)(F) Form of Investor Amended Warrant
- (1)(G) Form of Private Amended Warrant
- (5)(A) Current Report on Form 8-K/A containing audited financial statements for the fiscal years ended December 31, 2011 and 2010 (as filed with the SEC on May 11, 2012 and incorporated herein by reference)
- (5)(B) Report on Form 10-Q for the quarter ended March 31, 2012 (as filed with the SEC on May 15, 2012 and incorporated herein by reference)
- (5)(C) Report on Form 10-Q for the quarter ended June 30, 2012 (as filed with the SEC on August 14, 2012 and incorporated herein by reference)
- (5)(D) Report on Form 10-Q for the quarter ended September 30, 2012 (as filed with the SEC on November 13, 2012 and incorporated herein by reference)
- (5)(E) Form of Bridge Warrant of Organovo Holdings, Inc. (incorporated by reference to Exhibit 4.1 to the Company' Current Report on Form 8-K, as filed with the SEC on February 13, 2012)
- (5)(F) Form of Investor Warrant of Organovo Holdings, Inc. (incorporated by reference to Exhibit 4.4 to the Company' Current Report on Form 8-K, as filed with the SEC on February 13, 2012)
- (5)(G) Form of Private Warrant of Organovo Holdings, Inc. (incorporated by reference to Exhibit 4.3 to the Company' Current Report on Form 8-K, as filed with the SEC on February 14, 2012)
- (5)(H) Registration Statement on Form S-1 (File No. 333-182101), which registers the resale of the shares of common stock underlying the Bridge and Investor Warrants (as declared effective and filed with the SEC on July 6, 2012 and incorporated herein by reference)
- (b) Not applicable.
- (d) (1) Warrant Agent Agreement, dated November 13, 2012, by and between the Company and Aegis Capital Corp.
(2) Registration Rights Agreement (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, as filed with the SEC on March 16, 2012).
- (g) None.
- (h) None.

Item 13. INFORMATION REQUIRED BY SCHEDULE 13E-3.

Not Applicable.

SIGNATURE

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

ORGANOVO HOLDINGS, INC.

By: /s/ Keith Murphy

Name: Keith Murphy

Title: Chief Executive Officer and President
(Principal Executive Officer)

Date: November 16, 2012

November 16, 2012

ORGANOVO HOLDINGS, INC.

To the Holders of the Original Warrants

This letter is to inform you that Organovo Holdings, Inc. (the “**Company**”) is offering holders of certain warrants to purchase common stock of the Company (defined below as the “**Original Warrants**”) the opportunity to amend and exercise such Original Warrants, upon the terms set forth in the enclosed “Offer to Amend and Exercise Warrants to Purchase Common Stock of Organovo Holdings, Inc.” dated as of the date of this letter (the “**Offer to Amend and Exercise**”). The warrants subject to the Offer to Amend and Exercise are those held by: (i) the investors who participated in the Company’s bridge financing completed on November 2011 (the “**Bridge Warrants**”); (ii) the investors who participated the Company’s private placement financings closed on February 8, 2012, February 29, 2012 and March 16, 2012 (the “**Investor Warrants**”); and (iii) outstanding warrants to purchase shares of the Company’s common stock issued to investors in the Company’s private placement transactions completed in 2011 (the “**Private Warrants**”, and collectively with the Bridge Warrants and the Investor Warrants, the “**Original Warrants**”). All terms not defined in this letter shall have the meanings set forth in the Offer to Amend and Exercise.

The Offer to Amend and Exercise is an opportunity for the holders of the Original Warrants to amend and exercise the Original Warrants at a reduced warrant cash exercise price of \$0.80 per share of Common Stock, subject to the terms and conditions set forth in the Offer to Amend and Exercise. The purposes of the Offer to Amend and Exercise are to help the Company reduce its outstanding warrant liability and to raise funds to support the Company’s operations by encouraging the participating holders to exercise the Original Warrants by significantly reducing both the exercise price and the exercise period of the Original Warrants. The Company plans to use the funds obtained for working capital and other general corporate purposes.

The enclosed Offer to Amend and Exercise together with the Election to Participate and Exercise Warrant, forms of Amended Warrants and Notice of Withdrawal constitute the “**Offering Materials**.” The Offering Materials provide information regarding the Offer to Amend and Exercise and instructions as to how you can participate and exercise your Original Warrants. You should read all of the materials carefully before you decide whether to amend and exercise any of your Original Warrants. Also, please note that although there is no minimum participation requirement with respect to this Offer to Amend and Exercise, you may not elect to amend but not exercise your Original Warrants. Participation in this Offer to Amend and Exercise requires both amendment of your Original Warrants and your exercise of the Amended Warrants, which will happen simultaneously should you choose to participate.

To accept and exercise an Amended Warrant, you must deliver to the Company, prior to the expiration of the Offer to Amend and Exercise, which is 5:00 p.m. (Pacific time) on December 17, 2012, as may be extended by the Company in its sole discretion (the “**Expiration Date**”): (i) a signed copy of the Election to Participate and Exercise Warrant, (ii) a signed copy of an Accredited Investor Questionnaire, (iii) the original copy of your Original Warrant (or an Affidavit of Lost Warrant) for cancellation, and (iv) cash in the amount equal to \$0.80 per share multiplied by the number of shares of common stock you elect to purchase. The cash exercise price may be tendered in the form of a check payable to Organovo Holdings, Inc. or by wire transfer to the Company’s account as set forth in the Election to Participate and Exercise Warrant. These items must be properly delivered, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary, telephone number (858) 550-9994.

If you change your mind and do not want to participate in the Offer to Amend and Exercise, you may submit a Notice of Withdrawal to us at any time prior to the Expiration Date. The Notice of Withdrawal must be properly completed and must be returned to us on or prior to the Expiration Date. If you properly withdraw prior to the Expiration Date, we will return promptly your Original Warrants (or your Affidavit of Lost Warrant) and your aggregate exercise price.

Thank you for your time in reviewing this request.

Very truly yours,

/s/ Keith Murphy

Organovo Holdings, Inc.
Keith Murphy
Chief Executive Officer and President

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THE TRANSACTION CONTEMPLATED HEREIN; PASSED UPON THE MERITS OR FAIRNESS OF THE TRANSACTION; OR PASSED UPON THE ADEQUACY OR ACCURACY OF THE DISCLOSURE IN THIS DOCUMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

**OFFER TO AMEND AND EXERCISE
WARRANTS TO PURCHASE COMMON STOCK**

ORGANOVO HOLDINGS, INC.

NOVEMBER 16, 2012

**THE OFFER TO AMEND AND EXERCISE (AND ASSOCIATED WITHDRAWAL RIGHTS) WILL EXPIRE AT 5:00 P.M. (Pacific time) ON
DECEMBER 17, 2012 UNLESS THIS OFFER PERIOD IS EXTENDED.**

Organovo Holdings, Inc., a Delaware corporation, is referred to in this Offer to Amend and Exercise as “we,” “us,” “Organovo” or the “Company,” and eligible holders of outstanding warrants are referred to as “you.”

The Company is offering to amend, upon the terms and subject to the conditions set forth herein, warrants to purchase an aggregate of 14,510,928 shares of common stock (the “**Offer to Amend and Exercise**”), including: (i) outstanding warrants to purchase 1,500,000 shares of the Company’s common stock issued to investors participating in the Company’s bridge financing completed in November 2011 (the “**Bridge Warrants**”); (ii) outstanding warrants to purchase 11,653,678 shares of the Company’s common stock issued to investors participating in the Company’s private placement financings closed on February 8, 2012, February 29, 2012 and March 16, 2012 (the “**Investor Warrants**”); and (iii) outstanding warrants to purchase 1,357,250 shares of the Company’s common stock issued to investors in the Company’s private placement transactions completed in 2011 (the “**Private Warrants**” and collectively with the Bridge Warrants and the Investor Warrants, the “**Original Warrants**”). There is no minimum participation requirement with respect to this Offer to Amend and Exercise.

Pursuant to the Offer to Amend and Exercise, the Original Warrants will be amended (the “**Amended Warrants**”) to: (i) reduce the exercise price of the Original Warrants from \$1.00 per share to \$0.80 per share of common stock in cash, (ii) shorten the exercise period of the Original Warrants so that they expire concurrently with the expiration of the Offer to Amend and Exercise at 5:00 p.m. (Pacific Time) on December 17, 2012, as may be extended by the Company in its sole discretion (“**Expiration Date**”), (iii) delete the price-based anti-dilution provisions contained in the Original Warrants, (iv) restrict the ability of the holder of shares issuable upon exercise of the Amended Warrants to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any of such shares without the prior written consent of the Company for a period of time commencing on your exercise date and ending on the later of (a) the date that is twenty (20) days after exercise of this Warrant or (b) the date that is five business days after the Expiration Date (the “**Lock-Up Period**”); and (v) provide that a holder, acting alone or with others, will agree not to effect any purchases or sales of any securities of the Company in any “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, or any type of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements, or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers through the expiration of the Lock-Up Period. Other than set forth above, the terms of the Original Warrants will remain unmodified and in full force and effect.

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The Offer to Amend and Exercise is limited to “accredited investors” as that term is defined in Rule 501 of the Securities Act of 1933, as amended (the “**Securities Act**”). Eligible holders may elect to amend some or all of their Original Warrants. If you choose not to participate in the Offer to Amend and Exercise, your Original Warrants will remain in full force and effect, as originally issued.

The purpose of the Offer to Amend and Exercise is to encourage the amendment and exercise of the Original Warrants to help the Company reduce its outstanding warrant liability and to raise funds to support the Company’s operations by providing the holders of the Original Warrants with the opportunity to obtain and exercise an Amended Warrant by significantly reducing the exercise price of the Original Warrants. Please see Section 2 below for a description of the purposes of the Offer to Amend and Exercise.

The period during which Original Warrants may be amended and exercised on the terms described above will commence on November 16, 2012 (the date the materials relating to the Offer to Amend and Exercise are first sent to the holders, referred to herein as the “**Offer Date**”) through the Expiration Date (the “**Offer Period**”).

The Company will agree to amend all Original Warrants held by eligible holders, upon the terms and subject to the conditions of the Offer to Amend and Exercise and the attached Election to Participate and Exercise Warrant. ***IT IS THE COMPANY’S CURRENT INTENTION NOT TO CONDUCT ANOTHER OFFER DESIGNED TO INDUCE THE EARLY EXERCISE OF THE ORIGINAL WARRANTS.***

IMPORTANT PROCEDURES

This Offer to Amend and Exercise together with the Election to Participate and Exercise Warrant, Notice of Withdrawal, and Forms of Amended Warrants constitute the “**Offering Materials**.” These Offering Materials provide information regarding the Offer to Amend and Exercise and instructions as to how you can amend and exercise your Original Warrants. An election to participate in the Offer to Amend and Exercise will result in both the amendment of your Original Warrant(s) and your exercise of the Amended Warrant(s). You should read all of the materials carefully before you decide whether to accept and exercise an Amended Warrant.

To accept and exercise an Amended Warrant you must deliver to the Company before the Expiration Date all of the following: (i) a signed copy of the Election to Participate and Exercise Warrant, (ii) a signed copy of an Accredited Investor Questionnaire, (iii) the original copy of your Original Warrant (or an Affidavit of Lost Warrant) for cancellation, and (iv) cash in the amount equal to \$0.80 per share multiplied by the number of shares of common stock the holder elects to purchase (collectively, the “**Acceptance and Exercise Documents**”). The cash may be tendered in the form of a check payable to Organovo Holdings, Inc. or by wire transfer to the Company’s account as set forth in the Election to Participate and Exercise Warrant. Each of these items must be properly delivered, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary, telephone number (858) 550-9994.

If you change your mind and do not want to participate in the Offer to Amend and Exercise, you may submit a Notice of Withdrawal to the Company at any time prior to the Expiration Date. The Notice of Withdrawal must be properly completed and must be returned to the Company on or prior to the Expiration Date. If you properly withdraw prior to the Expiration Date, your Original Warrant will remain unmodified and in full force and effect. In addition, we will cancel the Election to Participate and Exercise Warrant and issue you a check equal to the exercise price you delivered to the Company with the Election to Participate and Exercise Warrant.

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If you have any question or need assistance, you should contact Aegis Capital Corp., the Warrant Agent (the “**Warrant Agent**”), for the Offer to Amend and Exercise. Aegis Capital may be reached at:

810 7th Avenue, 18th Floor
New York, NY 10019
Attention: Adam K. Stern
Head of Private Equity Banking
(646) 502-2401

You may request additional copies of this document and any of the Offering Materials from the Company. The Company may be reached at:

6275 Nancy Ridge Drive
San Diego, California 92121
Attention: Corporate Secretary
(858) 550-9994

OUR BOARD OF DIRECTORS MAKES NO RECOMMENDATION AS TO WHETHER OR NOT YOU SHOULD PARTICIPATE IN THE OFFER TO AMEND AND EXERCISE. YOU MUST MAKE YOUR OWN DECISION WITH RESPECT TO THE OFFER TO AMEND AND EXERCISE. FOR QUESTIONS REGARDING TAX IMPLICATIONS OR OTHER INVESTMENT-RELATED QUESTIONS, YOU SHOULD TALK TO YOUR OWN ATTORNEY, ACCOUNTANT AND/OR FINANCIAL PLANNER.

WE HAVE NOT AUTHORIZED ANY PERSON TO MAKE ANY RECOMMENDATION ON OUR BEHALF AS TO WHETHER OR NOT YOU SHOULD PARTICIPATE IN THE OFFER TO AMEND AND EXERCISE. YOU SHOULD RELY ONLY ON THE INFORMATION CONTAINED OR INCORPORATED BY REFERENCE IN THIS DOCUMENT.

THIS OFFER TO AMEND AND EXERCISE HAS BEEN PREPARED SOLELY FOR THE BENEFIT OF HOLDERS OF ORIGINAL WARRANTS. DISTRIBUTION OF THIS OFFER TO AMEND AND EXERCISE TO ANY PERSON OTHER THAN SUCH HOLDERS AND THOSE PERSONS RETAINED TO ADVISE SUCH HOLDERS IS UNAUTHORIZED AND ANY REPRODUCTION OF THIS OFFER TO AMEND AND EXERCISE OR RELATED DOCUMENTS, IN WHOLE OR IN PART, IS PROHIBITED.

THE SECURITIES BEING OFFERED PURSUANT TO THIS OFFER TO AMEND AND EXERCISE ARE BEING OFFERED PURSUANT TO EXEMPTIONS PROVIDED BY SECTION 4(2) OF THE SECURITIES ACT, REGULATION D, CERTAIN STATE SECURITIES LAWS AND CERTAIN RULES AND REGULATIONS PROMULGATED THEREUNDER.

THE DATE OF THIS OFFER TO AMEND AND EXERCISE IS NOVEMBER 16, 2012

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SUMMARY OF TERMS

Company:	Organovo Holdings, Inc., a Delaware corporation, with principal executive offices at 6275 Nancy Ridge Drive, San Diego, California 92121.
Eligible Original Warrants:	<p>The following Original Warrants are subject to the Offer to Amend and Exercise:</p> <p>Bridge Warrants: Outstanding warrants to purchase 1,500,000 shares of the Company's common stock issued to investors participating in the Company's bridge financing completed in November 2011;</p> <p>Investor Warrants: Outstanding warrants to purchase 11,653,678 shares of the Company's common stock issued to investors participating in the Company's private placement financings closed on February 8, 2012, February 29, 2012 and March 16, 2012; and</p> <p>Private Warrants: Outstanding warrants to purchase 1,357,250 shares of the Company's common stock issued to investors in the Company's private placement transactions completed in 2011.</p>
Expiration Date:	5:00 p.m., Pacific Time on December 17, 2012, as may be extended by the Company in its sole discretion.
Terms of Amended Warrants:	<p>Pursuant to the Offer to Amend and Exercise, the Original Warrants will be amended as described below:</p> <p>New Exercise Price: The exercise price of the Original Warrants will be reduced from \$1.00 per share to \$0.80 per share.</p> <p>New Termination Date: The termination date of the Original Warrants is being shortened to run concurrently with the Expiration Date.</p> <p>Lock-Up Period: The Amended Warrants will contain a lock-up provision that provides that the holder will not sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any of the shares issuable upon exercise of the Amended Warrants without the prior written consent of the Company for a period of time commencing on your exercise date and ending on the later of (i) the date that is twenty (20) days after exercise of this Warrant or (ii) the date that is five business days after the Expiration Date (the "Lock-Up Period"). In addition, the Company may impose stop-transfer restrictions to enforce these restrictions.</p> <p>No Cashless Exercise: The Amended Warrants must be exercised for cash, and any cashless exercise provisions in the Original Warrants will be inapplicable to the Amended Warrants. The shares of common stock issuable upon the exercise of the Amended Warrants will be issued to the holder prior to the expiration of a holder's Lock-Up Period.</p> <p>Anti-Dilution: The price-based anti-dilution provisions contained in the Bridge Warrants and Investor Warrants will be deleted and will have no application to the issuance (or deemed issuance) or exercise of the Amended Warrants.</p>

Market Restrictions: A holder, acting alone or with others, will agree not to effect any purchases or sales of any securities of the Company in any “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, or any type of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements, or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers through the expiration of the Lock-Up Period.

Other Terms: Except as set forth above all other terms of the Amended Warrants will be the same as the terms of the Original Warrants. See the forms of Amended Warrants attached hereto as Exhibits (a)(1)(E), (a)(1)(F) and (a)(1)(G) to the Schedule TO.

Partial Participation Permitted:

If Original Warrant holders choose to participate in the Offer to Amend and Exercise, they may amend and exercise any or all of such holder’s Original Warrants pursuant to the terms of the Offer to Amend and Exercise. The Company will issue a new Original Warrant exercisable for that number of shares of common stock that a holder elects to exclude from the Offer to Amend and Exercise.

Transfers:

The terms of the Original Warrants provide that a holder may transfer the Original Warrants to a third party if the transfer qualifies for an exemption from the registration requirements of the Securities Act to the reasonable satisfaction of the Company. Any holder of an Original Warrant who desires to transfer an Original Warrant should contact the Company prior to such transfer to ensure that the planned transfer satisfies the transfer restrictions set forth in the Original Warrants.

Conditions:

The Offer to Amend and Exercise is subject to certain conditions, as described herein:

(i) Participation in the Offer to Amend and Exercise is limited to “accredited investors” as such term is defined in Rule 501 of the Securities Act.

(ii) In addition, we are not making this Offer to Amend and Exercise to, nor will we accept any Election to Participate and Exercise Warrant from or on behalf of, Original Warrant holders in any jurisdiction in which the Offer to Amend and Exercise or the exercise of the Amended Warrants would not be in compliance with the laws of such jurisdiction.

As part of the Election to Participate and Exercise Warrant, the holders of the Original Warrants must complete an Accredited Investor Questionnaire. The holders of the Original Warrants previously represented to the Company that they were “accredited investors” in connection with the transactions in which such holders acquired the Original Warrants. As such, the Company anticipates that most, if not all, the holders of the Original Warrants will be eligible to participate in the Offer to Amend and Exercise.

You may not elect to amend but not exercise your Original Warrants. Participation in this Offer to Amend and Exercise requires both amendment of your Original Warrants and your exercise of the Amended Warrants, which will happen simultaneously should you choose to participate.

Future Amendments to the Offer to Amend and Exercise:

How to Participate in the Offer to Amend and Exercise:

Withdrawal Rights:

Purposes of the Offer to Amend and Exercise and Use of Proceeds:

Original Warrants of holders that elect not to participate and exercise will remain outstanding pursuant to their original terms.

If we materially change the terms of the Offer to Amend and Exercise we will extend the Expiration Date to the extent required under the rules of the Securities Exchange Act of 1934, as amended (the “Exchange Act”).

To accept and exercise an Amended Warrant you must deliver to the Company before the Expiration Date all of the Acceptance and Exercise Documents. The cash exercise price may be tendered in the form of a check payable to Organovo Holdings, Inc. or by wire transfer to the Company’s account as set forth in the Election to Participate and Exercise Warrant. All of the Acceptance and Exercise Documents must be properly delivered, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary, telephone number (858) 550-9994.

If you change your mind and do not want to participate in the Offer to Amend and Exercise, you may submit the Notice of Withdrawal to us at any time prior to the Expiration Date. The Notice of Withdrawal must be properly completed and must be returned, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary, telephone number (858) 550-9994. Following the Expiration Date, you cannot withdraw your Election to Participate and Exercise Warrant.

If you properly withdraw prior to the Expiration Date, we will within five (5) business days: (i) cancel your signed copy of the Election to Participate and Exercise Warrant, (ii) return the original copy of your Original Warrant, or issue you a new Original Warrant if you submitted an Affidavit of Lost Warrant, and (iii) provide you with a check equal to the amount of cash you paid to exercise the Amended Warrant.

The purposes of this Offer to Amend and Exercise are as follows:

Reduction of Warrant Liability: The Offer to Amend and Exercise can help the Company reduce the warrant liability recorded by the Company on its financial statements. The warrant liability serves as an impediment to certain goals of the Company, as significant warrant liability on the Company’s balance sheet may make it more difficult for the Company to list its shares of common stock on a national securities exchange. The Bridge Warrants and Investor Warrants contain price-based anti-dilution provisions that provide the holders with protection against future down-round financings. Based on these anti-dilution provisions, the Company is required to record a derivative liability on its balance sheet each fiscal quarter for these Bridge Warrants and Investor Warrants based on the fair value of the Bridge Warrants and Investor Warrants as of the end of such fiscal quarter. The Company’s obligation to continue to record a derivative liability each quarter for a particular Bridge Warrant or Investor Warrant ends when the Bridge Warrant or Investor Warrant is exercised or expires. Various factors are considered in the pricing models the Company used to value the Bridge Warrants and Investor Warrants, including the Company’s current stock price, the remaining life of the Bridge Warrants and Investor Warrants, the volatility of the Company’s stock price, and the risk free interest rate. As a result of the changes in these

factors, the warrant liability recorded by the Company was approximately \$47.5 Million, \$80.6 Million and \$35.5 Million for the fiscal quarters ended March 31, June 30 and September 30, 2012, respectively. Future changes in these factors will continue to have a significant impact on the computed fair value of the derivative liability for these Bridge Warrants and Investor Warrants. As such, the Company expects future changes in the fair value of the Bridge Warrants and Investor Warrants to continue to vary significantly from quarter to quarter. The Company believes these significant variations make it more difficult for investors to evaluate the Company's business and operations.

Fund Raising: An additional purpose of the Offer to Amend and Exercise is to raise funds to support the Company's future operations and capital requirements by encouraging the participating holders to exercise their Original Warrants by significantly reducing the exercise price and shortening the exercise period. The funds obtained will be used by the Company as working capital and for other general corporate purposes.

Registration of Warrant Shares:

The shares of common stock issuable upon exercise of the Amended Warrants are "restricted securities" and may not be sold by the holder absent a registration statement covering the resale of the shares or an exemption from the registration requirement. We have previously filed a Registration Statement on Form S-1 to register the resale of the shares of common stock underlying the Original Warrants under the Securities Act, and amending the Original Warrants through the Offer to Amend and Exercise will not affect the registration for holders named as selling shareholders in the Registration Statement. Consequently, the shares of common stock issuable upon exercise of the Amended Warrants have been registered, and are tradeable in accordance with the resale restrictions set forth in the "Plan of Distribution" section of the Prospectus in the Registration Statement. Each holder of Original Warrants should read the applicable Prospectus carefully before deciding whether to participate in the Offer to Amend and Exercise. In addition, any holder (including any transferees or acquirers) of an Original Warrant or Amended Warrant who is not listed as a selling stockholder in the Prospectus cannot resell such holder's shares in reliance on the Prospectus, unless and until the Company files a post-effective amendment to the Registration Statement to include such holder as a selling stockholder. Absent the filing of the post-effective amendment to the Registration Statement, the holder (including any transferees or acquirers) will be required to qualify for an exemption from the registration requirements, which may require a holding period of at least six months.

Taxes:

We recommend that you consult with your own tax advisor with regard to the possibility of any federal, state, local or other tax consequences of the Offer to Amend and Exercise. See Section 19 "Material U.S. Federal Income Tax Consequences" below for a discussion of the material U.S. Federal Income Tax Consequences of participating in the Offer to Amend and Exercise.

Fees and Expenses:

The Company has retained Aegis Capital to act as its Warrant Agent for the Offer to Amend and Exercise pursuant to a Warrant Agent Agreement, attached as Exhibit (d)(1) to its Schedule TO. Aegis Capital, in accordance with the terms of the Warrant Agent Agreement, shall use reasonable

commercial efforts to contact holders of the Original Warrants by mail, telephone, facsimile, or other electronic means and solicit their participation in the Offer to Amend and Exercise. Aegis Capital will receive a fee equal to 2% of the cash exercise prices paid by holders of the Original Warrants who participate in the Offer to Amend and Exercise. In addition, the Company has agreed to reimburse Aegis Capital for its reasonable out-of-pocket expenses and attorney's fees, including a \$35,000 non-accountable expense allowance. If such expenses and fees exceed \$35,000, Aegis Capital must thereafter provide invoices to the Company prior to seeking reimbursement and must obtain the Company's prior approval for any individual expenses in excess of \$2,500. The Company has agreed to indemnify Aegis Capital against certain liabilities in connection with the Offer to Amend and Exercise, including certain liabilities under the federal securities laws.

Interests of Directors and Executive Officers:

Two of our executive officers and one of our directors hold Original Warrants and may participate in the Offer to Amend and Exercise on the same terms and conditions as the other holders of the Original Warrants. Please see Section 17 "Interests of Directors and Officers in the Offer to Amend and Exercise" below.

Additional Information:

The Company has filed with the SEC a Tender Offer Statement on Schedule TO of which this Offer to Amend and Exercise is a part. This Offer to Amend and Exercise does not contain all of the information contained in the Schedule TO and the exhibits to the Schedule TO. We recommend that holders of the Original Warrants review the Schedule TO, including the exhibits, and the Company's other materials that have been filed with the SEC before making a decision on whether to participate in the Offer to Amend and Exercise.

The Board of Directors of the Company recognizes that the decision to participate in the Offer to Amend and Exercise is an individual one that should be based on a variety of factors. The holders of the Original Warrants should consult with their respective professional advisors if they have questions about their financial or tax situation. The information about this Offer to Amend and Exercise from the Company is limited to the Offering Materials.

The Company is subject to the information requirements of the Securities Exchange Act of 1934, as amended, and in accordance therewith files and furnishes reports and other information with the SEC. All reports and other documents the Company has filed with the SEC, including the Schedule TO relating to the Offer to Amend and Exercise, or will file with the SEC in the future, can be accessed electronically on the SEC's website at www.sec.gov.

Information Requests:

Please direct questions or requests for assistance regarding this Offer to Amend and Exercise, Election to Participate and Exercise Warrant, and Notice of Withdrawal or other materials, in writing, to the Warrant Agent — Aegis Capital Corp., 810 7th Avenue, 18th Floor, New York, NY 10019; Attn: Adam K. Stern, Head of Private Equity Banking (646) 502-2401.

Please direct requests for additional copies of this Offer to Amend and Exercise, Election to Participate and Exercise Warrant, and Notice of Withdrawal or other materials, in writing, to the Company — Organovo Holdings, Inc., 6275 Nancy Ridge Dr., San Diego, California 92121; Attn: Corporate Secretary, telephone (858) 550-9994.

ABOUT THIS OFFER TO AMEND AND EXERCISE

YOU SHOULD RELY ONLY ON THE INFORMATION CONTAINED OR INCORPORATED BY REFERENCE IN THIS OFFER TO AMEND AND EXERCISE. WE HAVE NOT AUTHORIZED ANYONE TO PROVIDE INFORMATION DIFFERENT FROM THAT CONTAINED OR INCORPORATED BY REFERENCE IN THIS OFFER TO AMEND AND EXERCISE AND, IF PROVIDED, SUCH INFORMATION MUST NOT BE RELIED UPON.

ALTHOUGH OUR BOARD OF DIRECTORS HAS APPROVED THE OFFER TO AMEND AND EXERCISE, NEITHER THE COMPANY, ITS DIRECTORS, OFFICERS, ADVISORS OR AGENTS, INCLUDING THE WARRANT AGENT, MAKES ANY RECOMMENDATION AS TO WHETHER YOU SHOULD ACCEPT THE OFFER TO AMEND AND EXERCISE. YOU SHOULD NOT CONSIDER THE BOARD'S APPROVAL TO BE A RECOMMENDATION AS TO WHETHER YOU SHOULD PARTICIPATE IN THE OFFER TO AMEND AND EXERCISE WARRANTS. YOU MUST MAKE YOUR OWN DECISION WHETHER TO ACCEPT THE OFFER TO AMEND AND EXERCISE.

RISK FACTORS

Investment in our common stock involves a substantial degree of risk and should be regarded as speculative. As a result, the purchase of our common stock should be considered only by persons who can reasonably afford to lose their entire investment. Before you elect to participate in the Offer to Amend and Exercise, you should carefully consider the risk and uncertainties described below in addition to the other information in this Offer to Amend and Exercise and other information incorporated herein by reference. Additional risks and uncertainties of which we are unaware or which we currently believe are immaterial could also materially adversely affect our business, financial condition or results of operations. In any case, the trading price of our common stock could decline, and you could lose all or part of your investment.

Risks related to our Business and our Industry

We have a limited operating history and a history of operating losses, and expect to incur significant additional operating losses.

We were incorporated in 2007, opened our laboratories in San Diego, California in January, 2009 and have only a limited operating history. Therefore, there is limited historical financial information upon which to base an evaluation of our performance. Our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by companies in their early stages of operations. We have generated operating losses since we began operations, including \$1,338,694, \$3,964,610 and \$6,396,501 for the year ended December 31, 2010 and 2011 and the nine months ended September 30, 2012, respectively, and as of September 30, 2012, we had an accumulated deficit of \$40.7 Million. We expect to incur substantial additional operating expenses over the next several years as our research, development, and commercial activities increase. The amount of future losses and when, if ever, we will achieve profitability are uncertain. Our ability to generate revenue and achieve profitability will depend on, among other things, entering into customer relationships with strategic partners, successful completion of the preclinical and clinical development of our partners' product candidates; obtaining necessary regulatory approvals by our partners or us from the FDA and international regulatory agencies; successful manufacturing, sales, and marketing arrangements; and raising sufficient funds to finance our activities. We might not succeed at any of these undertakings. If we are unsuccessful at some or all of these undertakings, our business, prospects, and results of operations may be materially adversely affected.

We will need to secure additional financing to support our planned operations.

We will require additional funds for our anticipated operations and if we are not successful in securing additional financing, we may be required to delay significantly, reduce the scope of or eliminate one or more of our research or development programs, downsize our general and administrative infrastructure, or seek alternative measures to avoid insolvency, including arrangements with collaborative partners or others that may require us to relinquish rights to certain of our technologies, product candidates or products.

We are an early-stage company with an unproven business strategy and may never achieve commercialization of our research tools and therapeutic products or profitability.

Our strategy of using our research tools for the collaborative development of therapeutic products is unproven. Our success will depend upon our ability to enter into additional collaboration agreements on favorable terms, to determine which research tools and therapeutic products have potential value, and to select an appropriate commercialization strategy for each research tool and potential therapeutic product we or our collaborators choose to pursue. If we are not successful in implementing our strategy to commercialize our research tools and potential therapeutic products, we may never achieve, maintain or increase profitability.

Our success and our collaborators' ability to sell therapeutic products will depend to a large extent upon reimbursement from health care insurance companies.

Our success may depend, in part, on the extent to which reimbursement for the costs of therapeutic products and related treatments will be available from third-party payers such as government health administration authorities,

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private health insurers, managed care programs, and other organizations. Over the past decade, the cost of health care has risen significantly, and there have been numerous proposals by legislators, regulators, and third-party health care payers to curb these costs. Some of these proposals have involved limitations on the amount of reimbursement for certain products. Similar federal or state health care legislation may be adopted in the future and any products that we or our collaborators seek to commercialize may not be considered cost-effective. Adequate third-party insurance coverage may not be available for us or our collaborative partners to establish and maintain price levels that are sufficient for realization of an appropriate return on investment in product development.

Our research tools are new and unproven and may not allow us or our collaborators to develop successful commercial products

Our research tools involve new and unproven approaches. We have not proven that our research tools will enable us or our collaborators to identify therapeutic products with commercial potential, or to develop or commercialize such therapeutic products. Even if we or our collaborators are successful in identifying therapeutic products based on discoveries made using our research tools, we or our collaborators may not be able to discover or develop commercially viable products. To date, no one has developed or commercialized any therapeutic or other life science product based on our research tools. If our research tools do not assist in the discovery and development of such therapeutic products, our current and potential collaborators may lose confidence in us and our research tools and our business may suffer as a result.

If our collaborators, licensees and customers do not successfully develop or commercialize therapeutic or other life science products using our research tools, we may not generate revenues from those customers. In addition, we may experience unforeseen technical complications, unrecognized defects and limitations in the productions of our research tools. These complications could materially delay or limit the use of those tools, substantially increase the anticipated cost of manufacturing them or prevent us from implementing research projects at high efficiency levels.

Our products and services are subject to the risks associated with new and rapidly evolving technologies.

Our proprietary tissue creation technology, drug discovery and research tools are subject to the risks associated with new, rapidly evolving technologies. In addition, the process of developing new technologies and products is complex, and if we are unable to develop enhancements to, and new features for, our existing products or acceptable new products that keep pace with technological developments or industry standards, our products may become obsolete, less marketable and less competitive.

The commercialization of therapeutic or other life science products developed using our research tools is subject to a variety of risks.

Development of therapeutic and other life science products based on our or our collaborators' use of our technologies will be subject to risks of failure inherent in their development or commercial viability. These risks include the possibility that any such products will:

- fail to be found through the use of research tools;
- be found to be toxic;
- be found to be ineffective;
- fail to receive necessary regulatory approvals;
- be difficult or impossible to manufacture on a large scale;
- be economically infeasible to market;
- fail to be developed prior to the successful marketing of similar products by competitors; or
- be impossible to market because they infringe the proprietary rights of third parties or compete with superior products marketed by third parties.

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We expect that our drug discovery collaborative partners or other clients that utilize our research tools will be required to submit their research for regulatory review in order to proceed with human testing of drug candidates. This review by the FDA and other regulatory agencies may result in timeline setbacks or complete rejection of an application to begin human studies, such as an Investigative New Drug (IND) application. Should our collaborative partners or other clients face such setbacks, we would be at risk of not being paid if there were agreed upon milestone and royalty payments. The risks of non-approval for our partners or other clients will include the inherent risks of unfavorable regulator opinion of a drug candidate's safety or efficacy, as well as the risk that the data generated by our platform technology is not found to be suitable to support the safety or efficacy of the drug. In addition, our platform technology is subject to the requirements of Good Laboratory Practice (GLP) to provide suitable data for INDs and other regulatory filings; no regulatory review of data from this platform has yet been conducted and there is no guarantee that our technology will be acceptable under GLP.

If we are unable to enter into or maintain strategic collaborations with third parties, we may have difficulty selling our research tools and therapeutic products and we may not generate sufficient revenue to achieve or maintain profitability.

Since we do not currently possess the resources necessary to develop, obtain approvals for or commercialize potential therapeutic products based on our technology, we must enter into collaborative arrangements to develop and commercialize these products. If we are not able to enter into these arrangements or implement our strategy to develop and commercialize therapeutic and other life science products based upon our research tools, we may not generate sufficient revenues to achieve or maintain profitability. Additionally, we may not be able to negotiate future collaborative arrangements on acceptable terms, if at all.

We cannot control our collaborators' allocation of resources or the amount of time that our collaborators devote to developing our programs or potential products, which may have a material adverse effect on our business.

We have collaborative research agreements with Pfizer and Unither, and will seek to enter into additional collaborations. Our agreements with our collaborators typically allow them significant discretion in electing whether to pursue product development, regulatory approval, manufacturing and marketing of the products they may develop with the help of our technology. We cannot control the amount and timing of resources our collaborators may devote to our programs or potential products. As a result, we cannot be certain that our collaborators will choose to develop and commercialize these products or that we will realize any milestone payments, royalties and other payments to which we may become entitled. In addition, if a partner is involved in a business combination, such as a merger or acquisition, or if a partner changes its business focus, its performance pursuant to its agreement with us may suffer and, as a result, we may not generate any revenues from royalty, milestone and similar provisions that may be included in our collaborative agreement with that partner.

Any termination or breach by or conflict with our collaborators or licensees could harm our business.

If we or any of our collaborators or licensees fail to renew or terminate any of our collaboration or license agreements or if either party fails to satisfy its obligations under any of our collaboration or license agreements or complete them in a timely manner, we could lose significant sources of revenue, which could result in volatility in our future revenue.

In addition, our agreements with our collaborators and licensees may have provisions that give rise to disputes regarding the rights and obligations of the parties. These and other possible disagreements could lead to termination of the agreement or delays in collaborative research, development, supply or commercialization of certain products, or could require or result in litigation or arbitration. Moreover, disagreements could arise with our collaborators over rights to our intellectual property or our rights to share in any of the future revenues of products developed by our collaborators. These kinds of disagreements could result in costly and time-consuming litigation. Any such conflicts with our collaborators could reduce our ability to obtain future

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collaboration agreements and could have a negative impact on our relationship with existing collaborators, adversely affecting our business and revenues. Finally, any of our collaborations or license agreements may prove to be unsuccessful.

Our collaborators could develop competing research, reducing the available pool of potential collaborators and increasing competition, which may adversely affect our business and revenues.

Our collaborators and potential collaborators could develop research tools similar to our own, reducing our pool of possible collaborative parties and increasing competition. Any of these developments could harm our product and technology development efforts, which could seriously harm our business. In addition, we may pursue opportunities in fields that could conflict with those of our collaborators. Developing products that compete with our collaborators' or potential collaborators' products could preclude us from entering into future collaborations with our collaborators or potential collaborators. Any of these developments could harm our product development efforts and could adversely affect our business and revenues.

If restrictions on reimbursements and health care reform limit our collaborators' actual or potential financial returns on therapeutic products that they develop based on our platform technology, our collaborators may reduce or terminate their collaborations with us.

Our collaborators' abilities to commercialize therapeutic and other life science products that are developed through the research tools or services that we provide may depend in part on the extent to which coverage and adequate payments for these products will be available from government payors, such as Medicare and Medicaid, private health insurers, including managed care organizations, and other third-party payors. These payors are increasingly challenging the price of medical products and services. Significant uncertainty exists as to the reimbursement status of newly approved therapeutic and other life science products, and coverage and adequate payments may not be available for these products.

In recent years, officials have made numerous proposals to change the health care system in the U.S. These proposals included measures to limit or eliminate payments for some medical procedures and treatments or subject the pricing of pharmaceuticals and other medical products to government control. Government and other third-party payors increasingly attempt to contain health care costs by limiting both coverage and the level of payments of newly approved health care products. In some cases, they may also refuse to provide any coverage of uses of approved products for disease indications other than those for which the FDA has granted marketing approval. Governments may adopt future legislative proposals and federal, state or private payors for healthcare goods and services may take action to limit their payments for goods and services. Any of these events could limit our ability to form collaborations or collaborators' and our ability to commercialize therapeutic products successfully.

We and our collaborators are subject to extensive and uncertain regulatory requirements, which could adversely affect our ability to obtain regulatory approval in a timely manner, or at all, for products that we identify or develop.

Therapeutic and other life science products are subject to an extensive and uncertain regulatory approval process by the Food and Drug Administration (FDA) and comparable agencies in other countries. The regulation of new products is extensive, and the required process of laboratory testing and human studies is lengthy and expensive. The burden of these regulations will fall on our collaborating partners, or may be shared with us, to the extent that we are developing proprietary products that are the result of a collaboration effort. The burden of these regulations will fall on us to the extent we are developing proprietary products on our own.

We may not be able to obtain FDA approvals for those products in a timely manner, or at all. We may encounter significant delays or excessive costs in our efforts to secure necessary approvals or licenses. Even if we obtain FDA regulatory approvals, the FDA extensively regulates manufacturing, labeling, distributing, marketing, promotion and advertising after product approval. Moreover, several of our product development areas may

involve relatively new technology and have not been the subject of extensive product testing in humans. The regulatory requirements governing these products and related clinical procedures remain uncertain and the products themselves may be subject to substantial review by foreign governmental regulatory authorities that could prevent or delay approval in those countries. Regulatory requirements ultimately imposed on our products could limit our ability to test, manufacture and, ultimately, commercialize our products and thereby could adversely affect our financial condition and results of operations.

Our business depends upon the success of our research tools as alternatives to current research tools.

Our success depends on commercial acceptance of our research tools. We believe that adoption of our research tools by our current and future collaborators will be essential for commercial acceptance of our research tools. We cannot assure you that our research tools will be adopted, or if adopted, that they will be broadly accepted by pharmaceutical, biotechnology and diagnostic companies or various academic institutions.

We believe that recommendations by health care professionals and health care payors will be essential for commercial acceptance of our collaborators' or our products. We cannot assure you that the products we or our collaborators develop will achieve commercial acceptance among patients, physicians or third-party payors. Failure to achieve commercial acceptance would materially adversely affect our business, financial condition and results of operations.

We face intense competition which could result in reduced acceptance and demand for our research tools and products.

The biotechnology industry is subject to intense competition and rapid and significant technological change. We have many potential competitors, including major drug companies, specialized biotechnology firms, academic institutions, government agencies and private and public research institutions. Many of these competitors have significantly greater financial and technical resources, experience and expertise in research and development, preclinical testing, designing and implementing clinical trials; regulatory processes and approvals; production and manufacturing; and sales and marketing of approved products than we have. Principal competitive factors in our industry include the quality and breadth of an organization's technology; management of the organization and the execution of the organization's strategy; the skill and experience of an organization's employees and its ability to recruit and retain skilled and experienced employees; an organization's intellectual property portfolio; the range of capabilities, from target identification and validation to drug and device discovery and development to manufacturing and marketing; and the availability of substantial capital resources to fund discovery, development and commercialization activities.

Large and established companies compete in the biotech market. In particular, these companies have greater experience and expertise than we have in securing government contracts and grants to support their research and development efforts, conducting testing and clinical trials, obtaining regulatory approvals to market products, manufacturing such products on a broad scale and marketing approved products than we have.

Smaller or early-stage companies and research institutions may also prove to be significant competitors, particularly through collaborative arrangements with large and established biotech or other companies, or the obtaining of substantial private financing. We will also face competition from these parties in recruiting and retaining qualified scientific and management personnel.

In order to effectively compete, we will have to make substantial investments in development, testing, manufacturing and sales and marketing or partner with one or more established companies. There is no assurance that we or our collaborators will be successful in commercializing and gaining significant market share for any of products developed in part through use of our technology. Our technologies, products and services also may be rendered obsolete or noncompetitive as a result of products and services introduced by our competitors.

We may have product liability exposure from the sale of our research tools and therapeutic products or the services we provide.

We may have exposure to claims for product liability. Product liability coverage is expensive and sometimes difficult to obtain. Given our operations to date, we currently do not maintain any product liability insurance coverage. At such point that we determine it is prudent to obtain this insurance, we may not be able to obtain or maintain insurance at a reasonable cost. There can be no assurance that existing insurance coverage will extend to other products in the future. Any product liability insurance coverage may not be sufficient to satisfy all liabilities resulting from product liability claims. A successful claim may prevent us from obtaining adequate product liability insurance in the future on commercially desirable items, if at all. Even if a claim is not successful, defending such a claim would be time-consuming and expensive, may damage our reputation in the marketplace, and would likely divert management's attention.

The near and long-term viability of our products and services will depend on our ability to successfully establish strategic relationships.

The near and long-term viability of our products and services will depend in part on our ability to successfully establish new strategic collaborations with biotechnology companies, pharmaceutical companies, universities, hospitals, insurance companies and government agencies. Establishing strategic collaborations is difficult and time-consuming. Potential collaborators may reject collaborations based upon their assessment of our financial, regulatory or intellectual property position. If we fail to establish a sufficient number of collaborations on acceptable terms, we may not be able to commercialize our products or generate sufficient revenue to fund further research and development efforts.

Even if we establish new collaborations, these relationships may never result in the successful development or commercialization of any product or service candidates for several reasons both within and outside of our control.

Although our current focus is on providing drug discovery services and research tools in the research setting, we may develop tissue therapeutic products and seek approval to sell them as medical care. Before we could begin commercial manufacturing of any of our product candidates, we or our manufacturers must pass a pre-approval inspection by the FDA and comply with the FDA's current Good Manufacturing Practices. If our manufacturers fail to comply with these requirements, our product candidates would not be approved. If our collaborators fail to comply with these requirements after approval, we would be subject to possible regulatory action and may be limited in the jurisdictions in which we are permitted to sell products.

We will be dependent on third-party research organizations to conduct some of our future laboratory testing, animal and human studies.

We will be dependent on third-party research organizations to conduct some of our laboratory testing, animal and human studies with respect to therapeutic tissues and other life science products that we may develop in the future. If we are unable to obtain any necessary testing services on acceptable terms, we may not complete our product development efforts in a timely manner. If we rely on third parties for laboratory testing and/or animal and human studies, we may lose some control over these activities and become too dependent upon these parties. These third parties may not complete testing activities on schedule or when we so request. We may not be able to secure and maintain suitable research organizations to conduct our laboratory testing and/or animal and human studies. We are responsible for confirming that each of our clinical trials is conducted in accordance with our general plan and protocol. Moreover, the FDA and foreign regulatory agencies require us to comply with regulations and standards, commonly referred to as good clinical practices, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the trial participants are adequately protected. Our reliance on third parties does not relieve us of these responsibilities and requirements. If these third parties do not successfully carry out their contractual duties or

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regulatory obligations or meet expected deadlines, if the third parties need to be replaced or if the quality or accuracy of the data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our pre-clinical development activities or clinical trials may be extended, delayed, suspended or terminated, and we may not be able to obtain regulatory approval for our future product candidates.

We may require access to a constant, steady, reliable supply of products.

To the extent that we develop products for sale, we may be required to complete clinical trials before we can offer such products for sale. Commercialization of products will require access to, or development of, facilities to manufacture a sufficient supply of our product candidates. If we are unable to manufacture our products in commercial quantities, then we will need to rely on third parties. These third-party manufacturers must also receive FDA approval before they can produce clinical material or commercial products. Our products may be in competition with other products for access to these facilities and may be subject to delays in manufacture if third parties give other products greater priority. In addition, we may not be able to enter into any necessary third-party manufacturing arrangements on acceptable terms, or on a timely basis. Furthermore, we would likely have to enter into a technical transfer agreement and share our know-how with the third party manufacturer.

We may rely on third-party suppliers for some of our materials.

We may rely on third-party suppliers and vendors for some of the materials we require in our drug discovery and research tool businesses as well as for the manufacture of any product candidates that we may develop in the future. Any significant problem experienced by one of our suppliers could result in a delay or interruption in the supply of materials to us until such supplier resolves the problem or an alternative source of supply is located. Any delay or interruption could negatively affect our operations.

Violation of government regulations or quality programs could harm demand for our products or services, and the evolving nature of government regulations could have an adverse impact on our business.

To the extent that our collaborators or customers use our products in the manufacturing or testing processes for their drug and medical device products, such end-products or services may be regulated by the FDA under Quality System Regulations (QSR) or the Centers for Medicare & Medicaid Services (CMS) under Clinical Laboratory Improvement Amendments of 1988 (CLIA'88) regulations. The customer is ultimately responsible for QSR, CLIA'88 and other compliance requirements for their products; however, we may agree to comply with certain requirements, and, if we fail to do so, we could lose sales and customers and be exposed to product liability claims.

Products that are intended for the diagnosis or treatment of disease are subject to government regulation. Our drug discovery and research tool offerings are currently intended for research or investigational uses. Research uses are not subject to FDA or premarket approval or other regulatory requirements. Investigational uses are not subject to FDA premarket approval or most regulatory requirements, but are subject to limited regulatory controls for entities conducting investigational studies.

As we continue to adapt and develop parts of our product line in the future, including tissue-based products in the field of regenerative medicine, the manufacture and marketing of our products will become subject to government regulation in the United States and other countries. In the United States and most foreign countries, we will be required to complete rigorous preclinical testing and extensive human clinical trials that demonstrate the safety and efficacy of a product in order to apply for regulatory approval to market the product.

The steps required by the FDA before our proposed products may be marketed in the United States include performance of preclinical (animal and laboratory) tests; submissions to the FDA of an IDE (Investigational Device Exemption), NDA (New Drug Application), or BLA (Biologic License Application) which must become effective before human clinical trials may commence; performance of adequate and well-controlled human

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clinical trials to establish the safety and efficacy of the product in the intended target population; performance of a consistent and reproducible manufacturing process intended for commercial use; Pre-Market Approval Application (PMA); and FDA approval of the PMA before any commercial sale or shipment of the product.

The processes are expensive and can take many years to complete, and we may not be able to demonstrate the safety and efficacy of our products to the satisfaction of such regulatory authorities. The start of clinical trials can be delayed or take longer than anticipated for many and varied reasons, many of which are outside of our control. Safety concerns may emerge that could lengthen the ongoing trials or require additional trials to be conducted. Regulatory authorities may also require additional testing, and we may be required to demonstrate that our proposed products represent an improved form of treatment over existing therapies, which we may be unable to do without conducting further clinical studies. Moreover, if the FDA grants regulatory approval of a product, the approval may be limited to specific indications or limited with respect to our distribution. Expanded or additional indications for approved devices or drugs may not be approved, which could limit our revenues. Foreign regulatory authorities may apply similar limitations or may refuse to grant any approval. Consequently, even if we believe that preclinical and clinical data are sufficient to support regulatory approval for our product candidates, the FDA and foreign regulatory authorities may not ultimately grant approval for commercial sale in any jurisdiction. If our products are not approved, our ability to generate revenues will be limited and our business will be adversely affected.

Even if a product gains regulatory approval, such approval is likely to limit the indicated uses for which it may be marketed, and the product and the manufacturer of the product will be subject to continuing regulatory review, including adverse event reporting requirements and the FDA's general prohibition against promoting products for unapproved uses. Failure to comply with any post-approval requirements can, among other things, result in warning letters, product seizures, recalls, substantial fines, injunctions, suspensions or revocations of marketing licenses, operating restrictions and criminal prosecutions. Any of these enforcement actions, any unanticipated changes in existing regulatory requirements or the adoption of new requirements, or any safety issues that arise with any approved products, could adversely affect our ability to market products and generate revenues and thus adversely affect our ability to continue our business.

We also may be restricted or prohibited from marketing or manufacturing a product, even after obtaining product approval, if previously unknown problems with the product or our manufacture are subsequently discovered and we cannot provide assurance that newly discovered or developed safety issues will not arise following any regulatory approval. With the use of any treatment by a wide patient population, serious adverse events may occur from time to time that initially do not appear to relate to the treatment itself, and only if the specific event occurs with some regularity over a period of time does the treatment become suspect as having a causal relationship to the adverse event. Any safety issues could cause us to suspend or cease marketing of our approved products, possibly subject us to substantial liabilities, and adversely affect our ability to generate revenues.

We are subject to various environmental, health and safety laws.

We are subject to various laws and regulations relating to safe working conditions, laboratory and manufacturing practices, the experimental use of animals, emissions and wastewater discharges, and the use and disposal of hazardous or potentially hazardous substances used in connection with our research, including infectious disease agents. We also cannot accurately predict the extent of regulations that might result from any future legislative or administrative action. Any of these laws or regulations could cause us to incur additional expense or restrict our operations. Compliance with environmental laws and regulations may be expensive, and current or future environmental regulations may impair our research, development or production efforts.

We will depend on our patent portfolio, our licensed technology and other trade secrets in the conduct of our business and must ensure that we do not violate the patent or intellectual rights of others.

Our success in large part depends on our ability to maintain the proprietary nature of our technology and other trade secrets. To do so, we and our licensors must prosecute and maintain existing patents, obtain new patents

and pursue trade secret and other intellectual property protection. We also must operate without infringing the proprietary rights of third parties or allowing third parties infringe our rights. Our research, development and commercialization activities, including any product candidates or products resulting from these activities, may infringe or be claimed to infringe patents owned by third parties and as to which we do not hold licenses or other rights. There may be rights that we are not aware of, including applications that have been filed but not published that, when issued, could be asserted against us. These third parties could bring claims against us that would cause us to incur substantial expenses and, if successful, could cause us to pay substantial damages. Further, if a patent infringement suit were brought against us, we could be forced to stop or delay research, development, manufacturing or sales of the product or biologic treatment candidate that is the subject of the suit.

In addition, competitors may infringe our patents or the patents of our collaborators or licensors. As a result, we may be required to file infringement claims to counter infringement for unauthorized use. This can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent owned by us is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover our technology. An adverse determination of any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at the risk of not issuing.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

A significant portion of our sales are dependent upon our customers' capital spending policies and research and development budgets, and government funding of research and development programs at universities and other organizations, which are each subject to significant and unexpected decrease.

Our prospective customers include pharmaceutical and biotechnology companies, academic institutions, government laboratories, and private research foundations. Fluctuations in the research and development budgets at these organizations could have a significant effect on the demand for our products and services. Research and development budgets fluctuate due to changes in available resources, patent expirations, mergers of pharmaceutical and biotechnology companies, spending priorities, general economic conditions, and institutional and governmental budgetary policies, including but not limited to reductions in grants for research by educational institutions. In addition, our business could be seriously damaged by any significant decrease in life sciences research and development expenditures by pharmaceutical and biotechnology companies, academic institutions, government laboratories, or private foundations.

The timing and amount of revenues from customers that rely on government funding of research may vary significantly due to factors that can be difficult to forecast. Research funding for life science research has increased more slowly during the past several years compared to the previous years and has declined in some countries, and some grants have been frozen for extended periods of time or otherwise become unavailable to various institutions, sometimes without advance notice. Government funding of research and development is subject to the political process, which is inherently fluid and unpredictable. Other programs, such as homeland security or defense, or general efforts to reduce the federal budget deficit could be viewed by the United States government as a higher priority. These budgetary pressures may result in reduced allocations to government agencies that fund research and development activities. Past proposals to reduce budget deficits have included reduced National Institute of Health and other research and development allocations. Any shift away from the funding of life sciences research and development or delays surrounding the approval of government budget proposals may cause our customers to delay or forego purchases of our products or services, which could seriously damage our business.

Risks Related to Our Common Stock and Liquidity Risks

Our securities are a “Penny Stock” and subject to specific rules governing their sale to investors.

The SEC has adopted Rule 15c-9 which establishes the definition of a “penny stock,” for the purposes relevant to our common stock, as any equity security that has a market price of less than \$5.00 per share or with an exercise price of less than \$5.00 per share, subject to certain exceptions. For any transaction involving a penny stock, unless exempt, the rules require that a broker or dealer approve a person’s account for transactions in penny stocks; and the broker or dealer receive from the investor a written agreement to the transaction, setting forth the identity and quantity of the penny stock to be purchased.

In order to approve a person’s account for transactions in penny stocks, the broker or dealer must obtain financial information and investment experience objectives of the person; and make a reasonable determination that the transactions in penny stocks are suitable for that person and the person has sufficient knowledge and experience in financial matters to be capable of evaluating the risks of transactions in penny stocks.

The broker or dealer must also deliver, prior to any transaction in a penny stock, a disclosure schedule prescribed by the SEC relating to the penny stock market, which, in highlight form sets forth the basis on which the broker or dealer made the suitability determination; and that the broker or dealer received a signed, written agreement from the investor prior to the transaction. Generally, brokers may be less willing to execute transactions in securities subject to the “penny stock” rules. This may make it more difficult for investors sell shares of our common stock.

Disclosure also has to be made about the risks of investing in penny stocks in both public offerings and in secondary trading and about the commissions payable to both the broker-dealer and the registered representative, current quotations for the securities and the rights and remedies available to an investor in cases of fraud in penny stock transactions. Finally, monthly statements have to be sent disclosing recent price information for the penny stock held in the account and information on the limited market in penny stocks.

The Company has a limited trading history and there is no assurance that an active market in the Company’s Common Stock will continue at present levels or increase in the future.

There is limited trading activity in our common stock and there is no assurance that an active market will develop in the future. Although our common stock is currently quoted on the OTCQX, the Company has a limited trading history and there is no assurance that an active market in the Company’s Common Stock will continue at present levels or increase in the future. As a result, an investor may find it difficult to dispose of our common stock. There can be no assurance that a more active market for our common stock will develop in the future, or if one should develop, there is no assurance that it will be sustained. This factor limits the liquidity of our common stock, and may have a material adverse effect on the market price of our common stock and on our ability to raise additional capital.

Compliance with the reporting requirements of federal securities laws can be expensive.

We are a public reporting company in the United States, and accordingly, subject to the information and reporting requirements of the Exchange Act and other federal securities laws, and the compliance obligations of the Sarbanes-Oxley Act. The costs of preparing and filing annual and quarterly reports and other information with the SEC and furnishing audited reports to stockholders are substantial. In addition, we will incur substantial expenses in connection with the preparation of the Registration Statement and related documents with respect to the registration of resales of the common stock underlying the Original Warrants.

Applicable regulatory requirements, including those contained in and issued under the Sarbanes-Oxley Act of 2002, may make it difficult for us to retain or attract qualified officers and directors, which could adversely affect the management of its business and its ability to obtain or retain listing of our common stock.

We may be unable to attract and retain those qualified officers, directors and members of board committees required to provide for effective management because of the rules and regulations that govern publicly held companies, including, but not limited to, certifications by principal executive officers. The enactment of the Sarbanes-Oxley Act has resulted in the issuance of a series of related rules and regulations and the strengthening of existing rules and regulations by the SEC, as well as the adoption of new and more stringent rules by the stock exchanges. The perceived increased personal risk associated with these changes may deter qualified individuals from accepting roles as directors and executive officers.

Further, some of these changes heighten the requirements for board or committee membership, particularly with respect to an individual's independence from the corporation and level of experience in finance and accounting matters. We may have difficulty attracting and retaining directors with the requisite qualifications. If we are unable to attract and retain qualified officers and directors, the management of our business and our ability to obtain or retain listing of our shares of common stock on any stock exchange (assuming we elect to seek and are successful in obtaining such listing) could be adversely affected.

We may have undisclosed liabilities and any such liabilities could harm our revenues, business, prospects, financial condition and results of operations.

Even though our pre-merger assets and liabilities were transferred to the Split-Off Shareholders in the Split-Off, there can be no assurance that we will not be liable for any or all of such liabilities. Any such liabilities that survived the Merger could harm our revenues, business, prospects, financial condition and results of operations upon our acceptance of responsibility for such liabilities. The transfer of the operating assets and liabilities to PSOS, coupled with the Split-Off of PSOS, will result in taxable income to us in an amount equal to the difference between the fair market value of the assets transferred and the pre-merger tax basis of the assets. Any gain recognized, to the extent not offset by our net operating loss carryforward, if any, will be subject to federal income tax at regular corporate income tax rates.

If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results or detect fraud. Consequently, investors could lose confidence in our financial reporting and this may decrease the trading price of our stock.

We must maintain effective internal controls to provide reliable financial reports and detect fraud. We have been assessing our internal controls to identify areas that need improvement. We are in the process of implementing changes to internal controls, but have not yet completed implementing these changes. Failure to implement these changes to our internal controls or any others that it identifies as necessary to maintain an effective system of internal controls could harm our operating results and cause investors to lose confidence in our reported financial information. Any such loss of confidence would have a negative effect on the trading price of our stock.

The price of our common stock may continue to be volatile, which could lead to losses by investors and costly securities litigation.

The trading price of our common stock is likely to be highly volatile and could fluctuate in response to factors such as:

- actual or anticipated variations in our operating results;
- announcements of developments by us or our competitors;
- the timing of IDE and/or NDA approval, the completion and/or results of our clinical trials
- regulatory actions regarding our products

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- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- adoption of new accounting standards affecting the our industry;
- additions or departures of key personnel;
- introduction of new products by us or our competitors;
- sales of the our common stock or other securities in the open market; and
- other events or factors, many of which are beyond our control.

The stock market is subject to significant price and volume fluctuations. In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been initiated against such a company. Litigation initiated against us, whether or not successful, could result in substantial costs and diversion of our management's attention and resources, which could harm our business and financial condition.

Investors may experience dilution of their ownership interests because of the future issuance of additional shares of our common stock.

In the future, we may issue additional authorized but previously unissued equity securities, resulting in the dilution of the ownership interests of our present stockholders. We may also issue additional shares of our common stock or other securities that are convertible into or exercisable for our common stock in connection with hiring or retaining employees, future acquisitions, future sales of our securities for capital raising purposes, or for other business purposes. The future issuance of any such additional shares of common stock may create downward pressure on the trading price of our common stock. There can be no assurance that the we will not be required to issue additional shares, warrants or other convertible securities in the future in conjunction with any capital raising efforts, including at a price (or exercise prices) below the price at which shares of our common stock is currently quoted on the OTCQX.

Our common stock is controlled by insiders.

Our executive officers and directors beneficially own approximately 23% of our outstanding shares of common stock, and Dr. Gabor Forgacs, the father of one of our directors, beneficially owns another 12.7% of our outstanding shares of common stock. Although we are not aware of any voting arrangements between our officers, directors and Dr. Forgacs, such concentrated control may adversely affect the price of our common stock. Investors who acquire our common stock may have no effective voice in the management of our operations. Sales by our insiders or affiliates, along with any other market transactions, could affect the market price of our common stock.

We do not intend to pay dividends for the foreseeable future.

We have paid no dividends on our common stock to date and it is not anticipated that any dividends will be paid to holders of our common stock in the foreseeable future. While our future dividend policy will be based on the operating results and capital needs of our business, it is currently anticipated that any earnings will be retained to finance our future expansion and for the implementation of our business plan. As an investor, you should take note of the fact that a lack of a dividend can further affect the market value of our stock, and could significantly affect the value of any investment.

Anti-takeover provisions in our organizational documents and Delaware law may discourage or prevent a change of control, even if an acquisition would be beneficial to our stockholders, which could affect our stock price adversely and prevent attempts by our stockholders to replace or remove our current management.

Our certificate of incorporation and bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions:

- authorize the issuance of preferred stock which can be created and issued by the board of directors without prior stockholder approval, with rights senior to those of the common stock;
- provide for a classified board of directors, with each director serving a staggered three-year term;
- prohibit our stockholders from filling board vacancies, calling special stockholder meetings, or taking action by written consent; and
- require advance written notice of stockholder proposals and director nominations.

In addition, we are subject to the provisions of Section 203 of the Delaware General Corporation Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These and other provisions in our certificate of incorporation, bylaws and Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by our then-current board of directors, including delay or impede a merger, tender offer, or proxy contest involving our company. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

Risks related to the Offer to Amend and Exercise.

Our Board of Directors makes no recommendation with regard to whether you should accept the Offer to Amend and Exercise.

Although our Board of Directors has approved the Offer to Amend and Exercise, it makes no recommendation as to whether holders of Original Warrants should accept the Offer to Amend and Exercise. We have not retained and do not intend to retain any unaffiliated representative to act solely on behalf of the holders of Original Warrants for purposes of negotiating the terms of the Offer to Amend and Exercise. We cannot assure you that the value of the shares issued upon exercise of the Amended Warrants will in the future equal or exceed the exercise price per share of the Amended Warrants. We do not take a position as to whether you ought to participate in the Offer to Amend and Exercise.

If you choose to participate in the Offer to Amend and Exercise, you will be required to exercise your Amended Warrants for Common Stock, and will be subject to all the risks associated with being a stockholder of the Company, give up the time value attributable to your Original Warrant and waive your anti-dilution rights.

The Amended Warrants will terminate if the holders do not exercise their Amended Warrants prior to the Expiration Date. If you choose to participate in the Offer to Amend and Exercise, you will be required to exercise your Amended Warrants prior to the Expiration Date. As a result, you will be subject to all the risks and uncertainties set forth in these risk factors as a holder of the Company's Common Stock. In addition, you will be giving up the time value attributable to your Original Warrant by exercising the Original Warrant, as amended, prior to the original 5-year expiration date. Additionally, the terms of the Amended Warrants delete the anti-dilution provisions set forth in the Bridge and Investors Warrants, and provide that these provisions have no application to the issuance or exercise of the Amended Warrants.

The shares of Common Stock issuable upon exercise of the Amended Warrants are "restricted securities".

The shares of Common Stock issuable upon exercise of the Amended Warrants are "restricted securities" and may not be sold by the holder absent a registration statement covering the resale of the shares or an exemption

from the registration requirement. The Company has previously filed a Registration Statement on Form S-1 to register the resale of the shares of Common Stock underlying the Original Warrants under the Securities Act, and amending the Original Warrants through the Offer to Amend and Exercise will not affect the registration for holders named as selling shareholders in the Registration Statement. Consequently, the shares of Common Stock issuable upon exercise of the Amended Warrants have been registered, and are tradeable in accordance with the resale restrictions set forth in the “Plan of Distribution” section of the Prospectus in the Registration Statement. Each holder of Original Warrants should read the applicable Prospectus carefully before deciding whether to participate in the Offer to Amend and Exercise. In addition, any holder (including any transferees or acquirers) of an Original Warrant or Amended Warrant who is not listed as a selling stockholder in the Prospectus cannot resell such holder’s shares in reliance on the Prospectus, unless and until the Company files a post-effective amendment to the Registration Statement to include such holder as a selling stockholder. Absent the filing of the post-effective amendment to the Registration Statement, the holder (including any transferees or acquirers) will be required to qualify for an exemption from the registration requirements, which may require a holding period of at least six months.

The shares of Common Stock issuable upon exercise of the Amended Warrants are subject to resale and market restrictions.

The shares of Common Stock issuable upon exercise of the Amended Warrants are subject to lock up provisions that provide that the holder will not sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any of such shares without the prior written consent of the Company for a period of time commencing on your exercise date and ending on the later of (i) the date that is twenty (20) days after exercise of this Warrant or (ii) the date that is five business days after the Expiration Date (the “**Lock-Up Period**”). The Company may impose stop-transfer restrictions to enforce these lock-up restrictions. In addition, a holder, acting alone or with others, participating in the Offer to Amend and Exercise has agreed not to effect any purchases or sales of any securities of the Company in any “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, or any type of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements, or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers through the expiration of the Lock-Up Period. As a result, the holder will be subject to market and the other risks discussed herein during the period of these resale and market restrictions

If you do not choose to participate in the Offer to Amend and Exercise, your Investor Warrants may be subject to redemption in the future.

The Investor Warrants may be redeemed by the Company at a redemption price of \$0.01 if the Company’s common stock trades above \$2.50 per share for twenty (20) consecutive trading days and you fail to exercise your Investor Warrants by the date set by the Company in a notice provided to the holders of the Investor Warrants of the Company’s election to redeem the Investor Warrants. Accordingly, if you choose not to participate in the Offer to Amend and Exercise, your warrants may be subject to redemption if and when the Company’s common stock trades above \$2.50 per share for twenty (20) consecutive trading days.

Income tax consequences of participation in the Offer to Amend and Exercise.

We have not obtained and do not intend to obtain a ruling from the Internal Revenue Service (“IRS”) regarding the U.S. federal income tax consequences of amending the Original Warrants and immediately exercising the Amended Warrants. You should consult with your own tax advisor with regard to the possibility of any federal, state, local or other tax consequences of the Offer to Amend and Exercise. See Section 19 “Material U.S. Federal Income Tax Consequences” under “Description of Offer.”

We will have substantial discretion over the use of proceeds we receive from the exercise of Amended Warrants.

Our management will retain broad discretion over the use of proceeds from the Offer to Amend and Exercise. See Section 2 “Purposes of the Offer to Amend and Exercise and Use of Proceeds” for a description of our present intentions with respect to the allocation of the proceeds resulting from exercise of the Amended Warrants. The amounts and timing of the expenditures may vary significantly depending on numerous factors. The occurrence of certain unforeseen events or changed business conditions, however, could result in the application of the proceeds resulting from the exercise of the Amended Warrants in a manner other than as described in this Offer to Amend and Exercise.

DESCRIPTION OF THE OFFER TO AMEND AND EXERCISE

Organovo Holdings, Inc. (the “**Company**”) is offering to amend, upon the terms and subject to the conditions set forth herein, warrants to purchase an aggregate of 14,510,928 shares of common stock (the “**Offer to Amend and Exercise**”), including: (i) outstanding warrants to purchase 1,500,000 shares of the Company’s common stock issued to investors participating in the Company’s bridge financing completed in November 2011 (the “**Bridge Warrants**”); (ii) outstanding warrants to purchase 11,653,678 shares of the Company’s common stock issued to investors participating in the Company’s private placement financings closed on February 8, 2012, February 29, 2012 and March 16, 2012 (the “**Investor Warrants**”); and (iii) outstanding warrants to purchase 1,357,250 shares of the Company’s common stock issued to investors in the Company’s private placement transactions completed in 2011 (the “**Private Warrants**” and collectively with the Bridge Warrants and the Investor Warrants, the “**Original Warrants**”). There is no minimum participation requirement with respect to this Offer to Amend and Exercise.

Pursuant to the Offer to Amend and Exercise, the Original Warrants will be amended (the “**Amended Warrants**”) to: (i) reduce the exercise price of the Original Warrants from \$1.00 per share to \$0.80 per share of common stock in cash, (ii) shorten the exercise period of the Original Warrants so that they expire concurrently with the expiration of the Offer to Amend and Exercise at 5:00 p.m. (Pacific Time) on December 17, 2012, as may be extended by the Company in its sole discretion (“**Expiration Date**”), (iii) delete the price-based anti-dilution provisions contained in the Original Warrants, (iv) restrict the ability of the holder of shares issuable upon exercise of the Amended Warrants to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any of such shares without the prior written consent of the Company for a period of time commencing on your exercise date and ending on the later of (a) the date that is twenty (20) days after exercise of this Warrant or (b) the date that is five business days after the Expiration Date (the “**Lock-Up Period**”); and (v) provide that a holder, acting alone or with others, will agree not to effect any purchases or sales of any securities of the Company in any “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, or any type of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements, or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers through the expiration of the Lock-Up Period. Other than set forth above, the terms of the Original Warrants will remain unmodified and in full force and effect.

SECTION 1. FORWARD LOOKING STATEMENTS

This Offer to Amend and Exercise contains forward-looking statements. These statements relate to anticipated future events, future results of operations or future financial performance. In some cases, you can identify forward-looking statements by terminology such as “may,” “might,” “will,” “should,” “intends,” “expects,” “plans,” “goals,” “projects,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” or “continue” or the negative of these terms or other comparable terminology. These forward-looking statements are only expectations, are uncertain and involve substantial known and unknown risks, uncertainties and other factors which may cause the Company’s (or its industry’s) actual results, levels of activity or performance to be materially different from any future results, levels of activity or performance expressed or implied by these forward-looking statements. The factors that could cause the Company’s actual results to differ materially from current expectations include, but are not limited to, risks and uncertainties relating to the Company’s ability to develop, market and sell products based on its technology; the expected benefits of the Company’s products and technology; the availability of substantial additional funding for the Company to continue its operations and to conduct research and development, clinical studies and future product commercialization; and, the Company’s business, research, product development, regulatory approval, marketing and distribution plans and strategies. The “Risk Factors” section of this Offer to Amend and Exercise sets forth detailed risks, uncertainties and cautionary statements regarding the Company’s business, the Company’s common stock and the risks of participating in the Offer to Amend and Exercise. You should not place undue reliance on these forward-looking statements, which speak only as of the date that they were made. These cautionary statements should be considered with any written or oral forward-looking statements that the Company may issue in the future. Except

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as required by applicable law, the Company does not intend to update any of the forward-looking statements to conform these statements to reflect actual results, later events or circumstances or to reflect the occurrence of unanticipated events.

SECTION 2. PURPOSES OF THE OFFER TO AMEND AND EXERCISE AND USE OF PROCEEDS

Reduction of Warrant Liability: The Offer to Amend can help the Company reduce the warrant liability recorded by the Company on its financial statements. The warrant liability serves as an impediment to certain goals of the Company, as significant warrant liability on the Company's balance sheet may make it more difficult for the Company to list its shares of common stock on a national securities exchange. The Bridge Warrants and Investor Warrants contain price-based anti-dilution provisions that provide the holders with protection against future down-round financings. Based on these anti-dilution provisions, the Company is required to record a derivative liability on its balance sheet each fiscal quarter for these Bridge Warrants and Investor Warrants based on the fair value of the Bridge Warrants and Investor Warrants as of the end of such fiscal quarter. The Company's obligation to continue to record a derivative liability each quarter for a particular Bridge Warrant or Investor Warrant ends when the Bridge Warrant or Investor Warrant is exercised or expires. Various factors are considered in the pricing models the Company used to value the Bridge Warrants and Investor Warrants, including the Company's current stock price, the remaining life of the Bridge Warrants and Investor Warrants, the volatility of the Company's stock price, and the risk free interest rate. As a result of the changes in these factors, the warrant liability recorded by the Company was approximately \$47.5 Million, \$80.6 Million and \$35.5 Million for the fiscal quarters ended March 31, June 30 and September 30, 2012, respectively. Future changes in these factors will continue to have a significant impact on the computed fair value of the derivative liability for these Bridge Warrants and Investor Warrants. As such, the Company expects future changes in the fair value of the Bridge Warrants and Investor Warrants to continue to vary significantly from quarter to quarter. The Company believes these significant variations make it more difficult for investors to evaluate the Company's business and operations.

Fund Raising: An additional purpose of the Offer to Amend and Exercise is to raise funds to support the Company's future operations and capital requirements by encouraging the participating holders to exercise their Original Warrants by significantly reducing the exercise price and shortening the exercise period. The funds obtained will be used by the Company as working capital and for other general corporate purposes.

SECTION 3. ELIGIBLE ORIGINAL WARRANTS

The following Original Warrants are subject to the Offer to Amend and Exercise:

Bridge Warrants: Outstanding warrants to purchase 1,500,000 shares of the Company's common stock issued to investors participating in the Company's bridge financing completed in November 2011, as amended;

Investor Warrants: Outstanding warrants to purchase 11,653,678 shares of the Company's common stock issued to investors participating in the Company's private placement financings closed on February 8, 2012, February 29, 2012 and March 16, 2012, as amended; and

Private Warrants: Outstanding warrants to purchase 1,357,250 shares of the Company's common stock issued to investors in the Company's private placement transactions completed in 2011.

SECTION 4. EXPIRATION DATE

The Offer to Amend and Exercise will be open through 5:00 p.m., Pacific Time on December 17, 2012, as may be extended by the Company in its sole discretion.

SECTION 5. TERMS OF AMENDED WARRANTS

Pursuant to the Offer to Amend and Exercise, the Original Warrants will be amended as described below:

New Exercise Price: The exercise price of the Original Warrants will be reduced from \$1.00 per share to \$0.80 per share.

New Termination Date: The termination date of the Original Warrants is being shortened to run concurrently with the Expiration Date.

Lock-Up Period: The Amended Warrants will contain a lock-up provision that provides that the holder will not sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any of the shares issuable upon exercise of the Amended Warrants without the prior written consent of the Company for a period of time commencing on your exercise date and ending on the later of (i) the date that is twenty (20) days after exercise of this Warrant or (ii) the date that is five business days after the Expiration Date. In addition, the Company may impose stop-transfer restrictions to enforce these restrictions.

No Cashless Exercise: The Amended Warrants must be exercised for cash, and any cashless exercise provisions in the Original Warrants will be inapplicable to the Offer to Amend and Exercise. The shares of common stock issuable upon the exercise of the Amended Warrants will be issued to the holder prior to the expiration of a holder's Lock-Up Period.

Anti-Dilution: The price-based anti-dilution provisions contained in the Bridge Warrants and Investor Warrants will be deleted. Any price-based anti-dilution provisions in the Original Warrants will be inapplicable to the Offer to Amend and Exercise.

Market Restrictions: A holder will agree not to effect any purchases or sales of any securities of the Company, acting alone or with others, in any "short sales" as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, or any type of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, "put equivalent positions" (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements, or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers through the expiration of the Lock-Up Period.

Other Terms: Except as set forth above all other terms of the Amended Warrants will be the same as the terms of the Original Warrants. See the forms of Amended Warrants attached hereto as Exhibits (a)(1)(E), (a)(1)(F) and (a)(1)(G) to the Schedule TO.

SECTION 6. CONDITIONS TO THE OFFER TO AMEND AND EXERCISE

The Offer to Amend and Exercise is subject to certain conditions, as described herein:

(i) Participation in the Offer to Amend and Exercise is limited to "accredited investors" as such term is defined in Rule 501 of the Securities Act.

(ii) In addition, we are not making this Offer to Amend and Exercise to, nor will we accept any Election to Participate and Exercise Warrant from or on behalf of, Original Warrant holders in any jurisdiction in which the Offer to Amend and Exercise or the exercise of the Amended Warrants would not be in compliance with the laws of such jurisdiction.

As part of the Election to Participate and Exercise Warrant, the holders of the Original Warrants must complete an Accredited Investor Questionnaire. The holders of the Original Warrants previously represented to the Company that they were "accredited investors" in connection with the transactions in which such holders acquired the Original Warrants. As such, the Company anticipates that most, if not all, the holders of the Original Warrants will be eligible to participate in the Offer to Amend and Exercise.

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You may not elect to amend but not exercise your Original Warrants. Participation in this Offer to Amend and Exercise requires both amendment of your Original Warrants and your exercise of the Amended Warrants, which will happen simultaneously should you choose to participate.

Original Warrants of holders that elect not to participate and exercise will remain outstanding pursuant to their original terms.

SECTION 7. EXTENSION OF OFFER TO AMEND AND EXERCISE PERIOD; TERMINATION; AMENDMENTS

The Company expressly reserves the right, in its sole discretion and at any time or from time to time, to extend the Expiration Date.

There can be no assurance, however, that the Company will exercise its right to extend the Offer to Amend and Exercise. Amendments to the Offer to Amend and Exercise will be made by written notice thereof to the holders of the Original Warrants. Material changes to information previously provided to holders of the Original Warrants in this Offer to Amend and Exercise or in documents furnished subsequent thereto will be disseminated to holders of Original Warrants. Also, should the Company, pursuant to the terms and conditions of the Offer to Amend and Exercise, materially amend the Offer to Amend and Exercise, the Company will ensure that the Offer to Amend and Exercise remains open long enough to comply with U.S. federal securities laws.

If the Company materially changes the terms of the Offer to Amend and Exercise or the information concerning the Offer to Amend and Exercise, or it waives a material condition of the Offer to Amend and Exercise, the Company will extend the Offer to Amend and Exercise to the extent required under applicable law. The minimum period during which an offer must remain open following any material change in the terms of the Offer to Amend and Exercise or information concerning the Offer to Amend and Exercise (other than a change in price, change in dealer's soliciting fee or change in percentage of securities sought all of which require up to ten (10) additional business days) will depend on the facts and circumstances, including the relative materiality of such terms or information.

SECTION 8. PROCEDURE FOR PARTICIPATING IN OFFER TO AMEND AND EXERCISE AND EXERCISING AMENDED WARRANTS

To accept and exercise an Amended Warrant you must deliver to the Company before the Expiration Date all of the following: (i) a signed copy of the Election to Participate and Exercise Warrant, (ii) a signed copy of an Accredited Investor Questionnaire, (iii) the original copy of your Original Warrant (or an Affidavit of Lost Warrant) for cancellation, and (iv) cash in the amount equal to \$0.80 per share multiplied by the number of shares of common stock the holder elects to purchase (collectively, the "Acceptance and Exercise Documents"). The cash exercise price may be tendered in the form of a check payable to Organovo Holdings, Inc. or by wire transfer to the Company's account as set forth in the Election to Participate and Exercise Warrant. Each of these items must be properly delivered, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary, telephone number (858) 550-9994.

SECTION 9. WITHDRAWAL RIGHTS

If you change your mind and do not want to participate in the Offer to Amend and Exercise, you may submit the Notice of Withdrawal to us at any time prior to the Expiration Date. The Notice of Withdrawal must be properly completed and must be returned, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary, telephone number (858) 550-9994. Following the Expiration Date, you cannot withdraw your Election to Participate and Exercise Warrant.

If you properly withdraw prior to the Expiration Date, we will within five (5) business days: (i) cancel your signed copy of the Election to Participate and Exercise Warrant, (ii) return the original copy of your Original Warrant, or issue you a new Original Warrant if you submitted an Affidavit of Lost Warrant, and (iii) provide you with a check equal to the amount of cash you paid upon exercise of the Amended Warrant.

SECTION 10. REGISTRATION OF WARRANT SHARES

The shares of common stock issuable upon exercise of the Amended Warrants are “restricted securities” and may not be sold by the holder absent a registration statement covering the resale of the shares or an exemption from the registration requirement. We have previously filed a Registration Statement on Form S-1 (File No. 333-182101) to register the resale of the shares of common stock underlying the Original Warrants under the Securities Act, and amending the Original Warrants through the Offer to Amend and Exercise will not affect the registration for holders named as selling shareholders in the Registration Statement. Consequently, the shares of common stock issuable upon exercise of the Amended Warrants have been registered, and are tradeable in accordance with the resale restrictions set forth in the “Plan of Distribution” section of the Prospectus in the Registration Statement. Each holder of Original Warrants should read the applicable Prospectus carefully before deciding whether to participate in the Offer to Amend and Exercise. In addition, any holder (including any transferees or acquirers) of an Original Warrant or Amended Warrant who is not listed as a selling stockholder in the Prospectus cannot resell such holder’s shares in reliance on the Prospectus, unless and until the Company files a post-effective amendment to the Registration Statement to include such holder as a selling stockholder. Absent the filing of the post-effective amendment to the Registration Statement, the holder (including any transferees or acquirers) will be required to qualify for an exemption from the registration requirements, which may require a holding period of at least six months.

SECTION 11. TRADING MARKET AND PRICE RANGE OF COMMON STOCK

Prior to February 15, 2012, our common stock was available for trading in the over-the-counter market and was quoted on the OTCQB and the OTCBB under the symbol “RERR.” From February 15, 2012 through October 7, 2012, our stock traded under the symbol “ONVO” and was quoted on the OTCQB. Commencing on October 8, 2012, our stock traded under the symbol “ONVO” and was quoted on the OTCQX. Prior to February 15, 2012, there was no bid history for the “ONVO” common stock, because the common stock had never been traded.

The following table sets forth the high and low last-bid prices for our common stock for the periods indicated, as reported by the OTC. The quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission, and may not represent actual transactions.

	2012	
	High	Low
First quarter (February 15th through March 31st)	\$ 2.63	\$1.24
Second quarter	\$10.90	\$2.00
Third quarter	\$ 1.56	\$4.24
Fourth quarter (through November 16th)	\$ 1.98	\$3.24

Trades in our common stock may be subject to Rule 15c-9 of the Exchange Act, which imposes requirements on broker/dealers who sell securities subject to the rule to persons other than established customers and accredited investors. For transactions covered by the rule, broker/dealers must make a special suitability determination for purchasers of the securities and receive the purchaser’s written agreement to the transaction before the sale.

The SEC also has rules that regulate broker/dealer practices in connection with transactions in “penny stocks.” Penny stocks generally are equity securities with a price of less than \$5.00 (other than securities listed on certain national exchanges, provided that the current price and volume information with respect to transactions in that security is provided by the applicable exchange or system). The penny stock rules require a broker/dealer, before effecting a transaction in a penny stock not otherwise exempt from the rules, to deliver a standardized risk disclosure document prepared by the SEC that provides information about penny stocks and the nature and level of risks in the penny stock market. The broker/dealer also must provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker/dealer and its salesperson in the transaction, and monthly account statements showing the market value of each penny stock held in the customer’s account. The bid and offer quotations, and the broker/dealer and salesperson compensation information, must be given to the

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customer orally or in writing before effecting the transaction, and must be given to the customer in writing before or with the customer's confirmation. These disclosure requirements may have the effect of reducing the level of trading activity in the secondary market for shares of our common stock. As a result of these rules, investors may find it difficult to sell their shares.

SECTION 12. SOURCE AND AMOUNT OF FUNDS

Because this transaction is solely an offer to holders to amend their outstanding Original Warrants, there are no funds or other consideration being paid to participants. The Company will use its existing working capital to pay the fees and expenses associated with this Offer to Amend and Exercise.

SECTION 13. TRANSACTIONS AND AGREEMENTS CONCERNING ORIGINAL WARRANTS

Except with respect to the Warrant Agent Agreement described in Item 8(b) of the Summary Term Sheet, none of our directors or executive officers participated in any transaction involving the Original Warrants during the past 60 days.

SECTION 14. INFORMATION REGARDING THE COMPANY

The following summary highlights selected information regarding the Company. Because it is a summary, it does not contain all of the information you should consider before making a decision to participate in the Offer to Amend and Exercise or exercise your Amended Warrant. Before making an investment decision, you should read the entire Offer to Amend and Exercise carefully, including the "Risk Factors" section above.

Overview

We have developed and are commercializing a platform technology for the generation of three-dimensional (3D) human tissues that can be employed in drug discovery and development, biological research, and as therapeutic implants for the treatment of damaged or degenerating tissues and organs. We intend to introduce a paradigm shift in the approach to the generation of three-dimensional human tissues, by creation of constructs in 3D that have the potential to replicate native human biology. We can improve on previous technologies by moving away from monolayer 2D cell cultures and by enabling all or part of the tissues we create to be constructed solely of cells. We believe our expertise in printing small-diameter, fully cellular human blood vessels *in vitro* provides a strong foundation upon which other tissues can be built to replicate human biology and human disease. We believe that our broad and exclusive commercial rights to patented and patent-pending 3D bioprinting technology, combined with strengths in engineering and biology, put us in an ideal position to provide a wide array of products for use in research, drug discovery and regenerative medicine therapies.

Our foundational proprietary technology derives from research led by Dr. Gabor Forgacs, a Professor of Biophysics at the University of Missouri. We have a broad portfolio of intellectual property rights covering principles, enabling instrumentation applications and methods of cell based printing, including exclusive licenses to certain patented and patent pending technologies from the University of Missouri-Columbia and Clemson University, and outright ownership of six pending patent applications (the patents and patent rights described in this paragraph are sometimes collectively referred to as the "Intellectual Property Rights"). We believe that our portfolio of Intellectual Property Rights provides a strong and defensible market position for the commercialization of 3D bioprinting technology.

We believe we have the potential to build and maintain a sustainable business by leveraging our core technology platform across a variety of applications. As part of our business strategy we intend to pursue collaboration agreements with drug development companies that will allow us to further develop our 3D bioprinting technology and the potential uses of the cellular structures and tissues that can be produced with our technology. We also plan to develop research products with our 3D bioprinting technology that can be offered to third parties involved in drug discovery. We currently have collaborative research agreements currently in effect with Pfizer,

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Inc. (“Pfizer”) and United Therapeutic Corporation (“Unither”). As of March 31, 2012, we have also secured five federal grants in the aggregate amount of approximately \$955,000 including Small Business Innovation Research grants and developed the NovoGen MMX Bioprinter™ (our first-generation 3D bioprinter) – within two and one half years of opening our first facilities. We believe these corporate achievements provide strong validation for the commercial viability of our technology.

As of September 30, 2012, we had devoted substantially all of our efforts to product development, raising capital and building infrastructure. We did not, as of that date, realize significant revenues from our planned principal operations. Accordingly, we are considered to be in the development stage.

The Technology

Our technology is centered around a core 3D bioprinting method, represented by our bioprinting instrument, the NovoGen MMX Bioprinter™. The 3D bioprinting technology enables a wide array of tissue compositions and architectures to be created, using combinations of cellular ‘bio-ink’ (building blocks comprised solely of cells), hydrogel (building blocks comprised of biocompatible gels), or hybrid ‘bio-ink’ (building blocks comprised of a mixture of cells and material such as hydrogel). A key distinguishing feature of our bioprinting platform is the ability to generate three-dimensional constructs that have all or some of their components comprised entirely of cells. The fully-cellular feature of our technology enables architecturally- and compositionally-defined 3D human tissues to be generated for *in vitro* use in drug discovery and development to potentially replicate the functional biology of a solid, fully cellular tissue. Furthermore, fully cellular constructs may offer specific advantages for regenerative medicine applications where bioactive cells are required and three-dimensional configuration is necessary, such as augmenting or replacing functional mass in tissues and organs that have sustained acute or chronic damage.

We plan to develop research products with our 3D bioprinting technology that can be offered to third parties involved in drug discovery. We intend to deliver the following products to the market:

- Three-dimensional models of human tissue for utilization in traditional absorption, distribution, metabolism, excretion (ADME) / toxicology (TOX) / and drug metabolism and pharmacokinetics (DMPK) testing in drug development.
- Specific models of human biology or pathophysiology, in the form of three-dimensional human tissues, and for use in drug discovery, development, and delivery.
- Three-dimensional human tissues for use as therapeutic regenerative medicine products, such as blood vessels for bypass grafting, nerve grafts for nerve damage repair and cardiac patches for treatment of heart disease.
- 3D bioprinters for use in medical research.
- A portfolio of consumables for use in 3D bioprinting.

As part of our business strategy we intend to pursue collaboration agreements with drug development companies that will allow us to further develop our 3D bioprinting technology and the potential uses of the cellular structures and tissues that can be produced with our technology. We currently have a collaborative research agreement with Pfizer to develop specific three-dimensional tissue models. We are engaged in the development of specific 3D human tissues to aid Pfizer in discovery of successful therapies in two areas of interest. In addition, in October 2011, we entered into a research agreement with Unither to establish and conduct a research program to discover treatments for pulmonary hypertension using our NovoGen MMX Bioprinter™ technology.

Market Opportunity

We believe that our bioprinting technology is uniquely positioned to provide three-dimensional human tissues for use in drug discovery and development as well as a broad array of tissues suitable for therapeutic use in

regenerative medicine applications. While there are rapid-prototyping printers currently available that build three-dimensional structures out of polymers (often used for prototyping of plastic parts for tools or devices), these instruments are not specifically designed or intended for use with purely cellular inks in building biologic tissues and we do not believe that the firms working on these instruments have the required biology expertise to create tissues using these instruments at this time. There are multiple markets addressable by our technology platform:

- **Specialized Models for Drug Discovery and Development:** Our NovoGen MMX Bioprinter™ can produce highly specialized three-dimensional human tissues that can be utilized to model a specific tissue physiology or pathophysiology. Our bioprinting technology has demonstrated the ability to create human blood vessel constructs, and to create fully human tissue containing capillary structures. These capabilities are anticipated to broaden the scope and scale of 3D tissues that can be generated, and to facilitate the development of disease models in such areas as cardiovascular disease, oncology, and fibrosis.
- **Biological Research Tools:** Absorption, distribution, metabolism, excretion (ADME) testing is used to determine which factors enhance or inhibit how a potential drug compound reaches the blood stream. Distribution of a compound can be affected by binding to plasma proteins; age, genetics, and other factors can influence metabolism of a compound; and the presence of certain disease states can have effects on excretion of a compound. Many companies perform ADME studies utilizing various cell-based assays or automated bioanalytical techniques. Drug metabolism and pharmacokinetics (DMPK) testing is a subset of ADME. Determining the DMPK properties of a drug helps the drug developer to understand its safety and efficacy. Toxicology (TOX) testing is a further requirement to determine the detrimental effects of a particular drug on specific tissues. We believe that the NovoGen MMX Bioprinter™ is positioned to deliver highly differentiated products for use in traditional cell-based ADME / TOX / DMPK studies. Products in this arena may replace or complement traditional cell-based assays that typically employ primary hepatocytes, intestinal cell lines, renal epithelial cells and cell lines grown in a traditional two-dimensional format. Importantly, the combination of tissue-like three-dimensionality and human cellular components is believed to provide an advantage over non-human animal systems toward predicting in vivo human outcomes.
- **Regenerative Medicine:** The field of regenerative medicine is advancing via multiple strategic approaches in development and practice, including cell therapies and scaffold-based products (+/- cells). The architectural precision and flexibility of our technology may facilitate the optimization, development, and clinical use of three-dimensional tissue constructs. Importantly, our technology offers a next-generation strategy whereby three-dimensional structures can be generated without the use of scaffolding or biomaterial components. The ultimate goal is to enable fully cellular constructs to be generated in a configuration compatible with surgical modes of delivery, thereby enabling restoration of significant functional mass to a damaged tissue or organ. We believe that our technology can capitalize, via strategic partnerships, on additional market opportunities in the provision of enabling tools for drug discovery and development as well as the discovery and development of therapeutic implants that augment or replace damaged tissues and organs. There are multiple short- and long-term revenue opportunities for us in these areas, including direct sales of 3D human tissue constructs for drug screening and development, licensing fees for commercial access to our technology, and royalties from product enablement, particularly in the area of therapeutic products for regenerative medicine.

Corporate Background

Real Estate Restoration and Rental, Inc. ("RERR"), our predecessor company, was incorporated in 2007 in the State of Nevada. On December 28, 2011, RERR entered into an Agreement and Plan of Merger pursuant to which RERR merged with its newly formed, wholly owned subsidiary, Organovo Holdings, Inc. ("Merger Sub"),

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a Nevada corporation (the “RERR Merger”). Upon the consummation of the RERR Merger, the separate existence of Merger Sub ceased and RERR, the surviving corporation in the RERR Merger, became known as Organovo Holdings, Inc. (“Holdings-Nevada”).

As permitted by Chapter 92A.180 of Nevada Revised Statutes, the sole purpose of the RERR Merger was to effect a change of RERR’s name. Upon the filing of Articles of Merger with the Secretary of State of Nevada on December 28, 2011 to effect the RERR Merger, RERR’s articles of incorporation were deemed amended to reflect the change in RERR’s corporate name.

On January 30, 2012, Holdings-Nevada entered into an Agreement and Plan of Merger pursuant to which Holdings-Nevada merged with and into its newly formed, wholly owned subsidiary, Organovo Holdings, Inc. (“Holdings-Delaware” or “Pubco”), a Delaware corporation (the “Reincorporation Merger”). Upon the consummation of the Reincorporation Merger, the separate existence of Holdings-Nevada ceased and Holdings-Delaware was the surviving corporation in the Reincorporation Merger. The sole purpose of the Reincorporation Merger was to change the domicile of Pubco from Nevada to Delaware.

On February 8, 2012, Organovo Acquisition Corp. (“Acquisition Corp.”), a wholly-owned subsidiary of Pubco, merged (the “Merger”) with and into Organovo, Inc., a Delaware corporation (“Organovo”). Organovo was the surviving corporation of that Merger. As a result of the Merger, Pubco acquired the business of Organovo, and will continue the existing business operations of Organovo.

SECTION 15. FINANCIAL INFORMATION REGARDING THE COMPANY

The Company’s financial statements are incorporated herein by reference:

- Current Report on Form 8-K/A filed with the SEC on May 11, 2012 containing audited financial statements for the fiscal years ended December 31, 2011 and 2010
- Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2012, filed with the SEC on May 14, 2012;
- Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2012, filed with the SEC on August 14, 2012; and
- Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2012, filed with the SEC on November 13, 2012.

The full text of the Current Report on Form 8-K/A and the Quarterly Reports on Form 10-Q, as well as the other documents the Company has filed with the Commission prior to, or will file with the Commission subsequent to, the filing of this Tender Offer Statement on Schedule TO, can be accessed electronically on the Commission’s website at www.sec.gov. In addition, the Company makes available, free of charge on its website all filings that are made electronically with the SEC. These materials can be found in the “Investors” section of our website at www.organovo.com, by clicking the “SEC Filings” link. Copies of our SEC filings are also available without charge upon written request addressed to: Organovo Holdings, Inc., 6275 Nancy Ridge Dr., San Diego, California 92121; Attn: Corporate Secretary.

SECTION 16. INTERESTS OF DIRECTORS AND EXECUTIVE OFFICERS IN THE OFFER TO AMEND AND EXERCISE

As of November 13, 2012, there were outstanding Original Warrants to purchase an aggregate of 14,410,928 shares of common stock. The Company's executive officers, directors and control persons, as described below, hold the following Original Warrants and will be entitled to participate in the Offer to Amend and Exercise on the same terms and conditions as the other holders of Original Warrants:

<u>Name</u>	<u>Position with the Company</u>	<u>Number of Original Warrants Held</u>	<u>Percentage of Original Warrants Held</u>
Barry D. Michaels	Chief Financial Officer	10,000	*
Eric Michael David	Chief Strategy Officer	20,000	*
Robert Baltera	Director	28,000	*

* Less than 1%

Except as set forth above, none of the Company's other executive officers, directors or control persons hold Original Warrants.

SECTION 17. LEGAL MATTERS AND REGULATORY APPROVALS

We are not aware of any license or regulatory permit material to our business that might be adversely affected by the Offer to Amend and Exercise and the issuance of the shares of common stock upon the exercise of the Amended Warrants. Our obligations under the Offer to Amend and Exercise are subject to the conditions described in Section 6 "Conditions of the Offer to Amend and Exercise" above.

SECTION 18. MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES

The following is a summary of the material U.S. federal income tax consequences that we believe will be applicable to Original Warrant holders who participate in the Offer to Amend and Exercise. However, we have not requested a ruling from the IRS or any opinion of counsel with regard to the treatment of warrant holders participating in the exchange and there can be no assurance, as discussed below, that the IRS will not take a position inconsistent with our expectations.

This discussion does not address all aspects of federal income taxation that may be relevant to you in light of your particular circumstances, or to those Original Warrant holders who are subject to special rules, such as financial institutions and mutual funds; banks; insurance companies; investment companies; retirement plans; tax-exempt organizations; dealers or traders in securities; any person that holds their Original Warrants as part of a straddle or hedge arrangement; partnerships or other pass-through entities; persons who are not citizens or residents of the United States or who are foreign corporations, foreign partnerships or foreign estates or trusts for U.S. federal income tax purposes or whose functional currency is not the U.S. dollar; or persons who are subject to the alternative minimum tax provisions of the Internal Revenue Code (the "**Code**").

This discussion assumes that Original Warrant holders hold the Original Warrants as capital assets. In addition, the following discussion does not address the tax consequences of the participation in the Offer to Amend and Exercise under foreign, state or local tax laws. You are urged to consult your tax advisors as to the U.S. federal income tax consequences of participating in the Offer to Amend and Exercise and related reporting obligations, as well as the effects of state, local and non-U.S. tax laws and U.S. tax laws other than income tax laws.

Tax treatment of Original Warrant holders participating in the Offer to Amend and Exercise.

Although not free from doubt, the Company intends to take the position that the amendment of your Original Warrants followed by an exercise of the Amended Warrants is treated as an exchange of Original Warrants for

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Amended Warrants which constitutes a recapitalization for U.S. federal income tax purposes, followed by the subsequent exercise of the Amended Warrants. Under this treatment, (i) an Original Warrant holder who participates in the Offer to Amend would not recognize any gain or loss as a result of amending the Original Warrants, (ii) such U.S. holder's tax basis in the shares of our common stock received upon exercise of the Amended Warrants would be equal to the U.S. holder's tax basis in the Original Warrants plus the amount of any cash paid to exercise the Amended Warrants, and (iii) the holding period of the common stock would begin on the day after the exercise of the Amended Warrants.

Because of the lack of authority dealing with transactions similar to the Offer to Amend, the U.S. federal income tax consequences of the Offer to Amend are unclear, and alternative characterizations are possible that could require you to recognize gain or loss or may impact your holding period. The Internal Revenue Service has not made a determination, nor has the Company received any opinion of counsel, on the U.S. federal income tax consequences of the Offer to Amend or of a holder's participation in the Offer to Amend. Therefore, we urge you to consult your tax advisor regarding the potential tax consequences of the Offer to Amend to you in your particular circumstances, including the consequences of possible alternative characterizations.

Distributions on Common Stock Received upon Exercise of New Warrants

After you exercise the Amended Warrant, any distributions you receive in respect of our common stock generally will be treated as a dividend, subject to tax as ordinary income, to the extent payable out of our current or accumulated earnings and profits (as determined for U.S. federal income tax purposes), then as a tax-free return of capital to the extent of your tax basis in the shares of our common stock, and thereafter as gain from the sale or exchange of the stock. Dividends received by a non-corporate holder currently qualify for taxation at a reduced 15% rate (subject to increase for tax years beginning after December 31, 2012) if the holder meets certain holding period and other applicable requirements. Dividends received by a corporate holder will be eligible for the dividends-received deduction if the holder meets certain holding period and other applicable requirements.

Sale or Other Taxable Disposition of Common Stock

You will generally recognize gain or loss upon the sale, exchange or other taxable disposition of shares of our common stock equal to the difference between (1) the amount of cash and the fair market value of any property received and (2) your adjusted tax basis in the shares of our common stock. Any gain or loss you recognize generally will be treated as a capital gain or loss. The capital gain or loss will be long-term if your holding period in the common stock is more than one year at the time of sale, exchange or other taxable disposition and will be short-term if your holding period is one year or less. Long-term capital gains of individuals and other non-corporate taxpayers are generally eligible for reduced rates of taxation. The deductibility of capital losses is subject to certain limitations.

Medicare Tax

For taxable years beginning after December 31, 2012, certain holders that are individuals, estates or trusts will be subject to a 3.8% Medicare tax on, among other things, dividends on and capital gains from the sale or other disposition of stock, subject to certain exceptions. You are urged to consult your tax advisors regarding the applicability of the Medicare tax to your income and gains arising from ownership and disposition of our common stock.

Information Reporting and Backup Withholding

Information reporting requirements generally will apply to certain holders with respect to dividends paid on, or, under certain circumstances, the proceeds of a sale, exchange or other disposition of, common stock. Under the Code and applicable Treasury Regulations, a holder of common stock may be subject to backup withholding (currently at a rate of 28%, subject to increase for taxable years beginning after December 31, 2012) with respect to dividends paid on common stock, or the proceeds of a sale, exchange or disposition of common stock, unless

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such holder (a) is a corporation or comes within certain other exempt categories and, when required, demonstrates this fact in the manner required, or (b) within a reasonable period of time, provides a correct taxpayer identification number, certifies that it is not subject to backup withholding and otherwise complies with applicable requirements of the backup withholding rules. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules will generally be allowed as a credit against a holder's U.S. federal income tax liability and may entitle such holder to a refund, provided the required information is timely furnished to the IRS. You should consult their tax advisors regarding the application of information reporting and backup withholding rules in their particular situations, the availability of an exemption therefrom, and the procedure for obtaining such an exemption, if applicable.

SECTION 19. FEES AND EXPENSES

The Company has retained Aegis Capital to act as its Warrant Agent for the Offer to Amend and Exercise pursuant to a Warrant Agent Agreement, attached as Exhibit (d)(1) to its Schedule TO. Aegis Capital, in accordance with the terms of the Warrant Agent Agreement, shall use reasonable commercial efforts to contact holders of the Original Warrants by mail, telephone, facsimile, or other electronic means and solicit their participation in the Offer to Amend and Exercise and to exercise their Amended Warrants. Aegis Capital will receive a fee equal to 2% of the aggregate cash exercise price paid by holders of the Original Warrants who participate in the Offer to Amend and Exercise. In addition, the Company has agreed to reimburse Aegis Capital for its reasonable out-of-pocket expenses and attorney's fees, including a \$35,000 non-accountable expense allowance. If such expenses and fees exceed \$35,000, Aegis Capital must thereafter provide invoices to the Company prior to seeking reimbursement and must obtain the Company's prior approval for any individual expenses in excess of \$2,500. The Company has agreed to indemnify Aegis Capital against certain liabilities in connection with the Offer to Amend and Exercise, including certain liabilities under the federal securities laws.

SECTION 20. TRANSFERS

The terms of the Original Warrants provide that a holder may transfer the Original Warrants to a third party if the transfer qualifies for an exemption from the registration requirements of the Securities Act to the reasonable satisfaction of the Company. Any holder of an Original Warrant who desires to transfer an Original Warrant should contact the Company prior to such transfer to ensure that the planned transfer satisfies the transfer restrictions set forth in the Original Warrants.

SECTION 21. ADDITIONAL INFORMATION

The Company has filed with the SEC a Tender Offer Statement on Schedule TO of which this Offer to Amend and Exercise is a part. This Offer to Amend and Exercise does not contain all of the information contained in the Schedule TO and the exhibits to the Schedule TO. We recommend that holders of the Original Warrants review the Schedule TO, including the exhibits, and the Company's other materials that have been filed with the SEC before making a decision on whether to participate in the Offer to Amend and Exercise and to exercise the Amended Warrants.

The Board of Directors of the Company recognizes that the decision to participate in the Offer to Amend and Exercise and to exercise the Amended Warrants is an individual one that should be based on a variety of factors. The holders of the Original Warrants should consult with their respective professional advisors if they have questions about their financial or tax situation. The information about this Offer to Amend and Exercise from the Company is limited to the Offering Materials.

The Company is subject to the information requirements of the Securities Exchange Act of 1934, as amended, and in accordance therewith files and furnishes reports and other information with the SEC. All reports and other documents the Company has filed with the SEC, including the Schedule TO relating to the Offer to Amend and Exercise, or will file with the SEC in the future, can be accessed electronically on the SEC's website at www.sec.gov.

SECTION 22. INFORMATION REQUESTS

Please direct questions or requests for assistance regarding this Offer to Amend and Exercise, Election to Participate and Exercise Warrant, and Notice of Withdrawal or other materials, in writing, to the Warrant Agent — Aegis Capital Corp., 810 7th Avenue, 18th Floor, New York, NY 10019; Attn: Adam K. Stern, Head of Private Equity Banking, telephone (646) 502-2401.

Please direct requests for additional copies of this Offer to Amend and Exercise, Election to Participate and Exercise Warrant, and Notice of Withdrawal or other materials, in writing, to the Company — Organovo Holdings, Inc., 6275 Nancy Ridge Dr., San Diego, California 92121; Attn: Corporate Secretary.

Sincerely,

/s/ Keith Murphy

Keith Murphy

Chief Executive Officer and President

Organovo Holdings, Inc.
6275 Nancy Ridge Drive
San Diego, California 92121
Phone: (858) 550-9994

**ELECTION TO PARTICIPATE AND EXERCISE WARRANT PURSUANT TO
OFFER TO AMEND AND EXERCISE WARRANTS TO PURCHASE COMMON STOCK
OF ORGANOVO HOLDINGS, INC.
DATED NOVEMBER 16, 2012**

To: Organovo Holdings, Inc.
6275 Nancy Ridge Drive
San Diego, CA 92121
Attn: Corporate Secretary
Fax. No. 858.550.9948

Pursuant to the terms and subject to the conditions of the Offer to Amend and Exercise Warrants to Purchase Common Stock of Organovo Holdings, Inc. dated November 16, 2012, as may be amended or supplemented from time to time (the "Offer to Amend and Exercise"), I hereby agree and elect to amend and exercise some or all of my Original Warrants (as defined in the Offer to Amend and Exercise) at the reduced amendment price of \$0.80 as set forth in Table 1 below. Capitalized terms not otherwise defined in this Election to Participate and Exercise Warrant shall have the meanings ascribed to them in the Offer to Amend and Exercise.

**TABLE 1
NUMBER OF ORIGINAL WARRANTS TO BE AMENDED AND EXERCISED**

A Number of "Bridge Warrants" Being Amended and Exercised	B Exercise Price Per Share
_____	\$0.80
A Number of "Investor Warrants" Being Amended and Exercised	B Exercise Price Per Share
_____	\$0.80
A Number of "Private Warrants" Being Amended and Exercised	B Exercise Price Per Share
_____	\$0.80

EXERCISE PRICE AND STOCK CERTIFICATES

The undersigned hereby irrevocably elects to exercise and to purchase the number of shares of Organovo Holdings, Inc. common stock issuable upon exercise of Original Warrants listed in Table 1 above and delivery of:

\$ (in cash, which is the product of \$0.80 multiplied by the number of Original Warrants being amended and exercised hereunder as set forth in Table 1 above).

The undersigned requests that certificates for such shares be issued in the name of:

(Please print name, address and social security or federal employer
identification number (if applicable))

If the shares issuable upon this exercise are not all of the shares issuable for all of the holder's Original Warrants, the undersigned requests that a new Original Warrant evidencing the rights not so exercised be issued in the name of and delivered to:

(Please print name, address and social security or federal employer
identification number (if applicable))

Name of Holder (print): _____

(Signature): _____

(By:) _____

(Title:) _____

Dated: _____

ACKNOWLEDGMENTS AND REPRESENTATIONS AND WARRANTIES

I understand and acknowledge that:

(1) To accept the Offer to Amend and Exercise I must comply with the **"Instructions for Delivery"** (attached hereto).

(2) If I elect to participate, I hereby agree and acknowledge that my Original Warrants described in Table 1 above shall be deemed automatically amended as applicable, as set forth in Exhibit A-1 attached hereto, with respect to the "Bridge Warrants," as set forth in Exhibit A-2 attached hereto, with respect to the "Investor Warrants," and as set forth in Exhibit A-3 attached hereto, with respect to the "Private Warrants," without any further action or signature required by me or the Company.

(3) If I elect to participate, I understand that I am automatically and contemporaneously exercising my Amended Warrants.

(4) If I elect not to participate, my Original Warrants will remain unmodified and will expire in accordance with their terms.

(5) If I choose to execute and deliver this Election to Participate and Exercise Warrant along with the aggregate exercise price applicable with respect to my Amended Warrants to the Company, the Company will place the aggregate exercise price funds into a separate non-interest bearing account until the Expiration Date of the Offer to Amend and Exercise and prior to the expiration of the Lock-Up Period, the Company will send me a stock certificate representing the number of shares of common stock issuable upon the issuance and exercise of the Amended Warrants set forth in Table 1 of this Election to Participate and Exercise Warrant. If I have decided to amend and exercise less than my total number of Original Warrants, the Company will send me a new Original Warrant for the amount of Original Warrants I excluded from this Election to Participate and Exercise Warrant.

(6) By amending and exercising the Original Warrants pursuant to the procedure described in the Offer to Amend and Exercise and in the instructions to this Election to Participate and Exercise Warrant, I accept the terms and conditions of the Offer to Amend and Exercise.

(7) The Company has advised me to consult with my own legal, tax and accounting advisors as to the consequences of participating or not participating in the Offer to Amend and Exercise.

(8) I may not participate in Offer to Amend and Exercise unless I am an “Accredited Investor” as defined in Rule 501 of Regulation D of the Securities Act of 1933, as amended, and I have accurately completed and executed the Accredited Investor Questionnaire. The Offer to Amend and Exercise is not being offered to holders in any jurisdiction in which the offering or acceptance of participation in the Offer to Amend and Exercise would not be in compliance with the laws of such jurisdiction.

(9) All authority herein conferred or agreed to be conferred shall not be affected by, and shall survive, my death or incapacity, and all of my obligations hereunder shall be binding upon my heirs, personal representatives, successors and assigns. Except as stated in the Offer to Amend and Exercise, this amendment is irrevocable.

(10) Upon request, I will execute and deliver any additional documents deemed by the Company to be necessary or desirable to complete the amendment and exercise of the Original Warrants pursuant to the Offer to Amend and Exercise.

I hereby represent and warrant that:

(1) I have the full power and authority to execute, deliver and perform any obligations hereunder and that, when and to the extent the Original Warrants are accepted for amendment and exercise by the Company, the Original Warrants will be free and clear of all security interests, liens, restrictions, charges, encumbrances, conditional sales agreements or other obligations relating to the sale or transfer thereof and the Original Warrants will not be subject to any adverse claims.

(2) I have such knowledge and experience in financial and business matters that I am capable of evaluating the merits and risks of investment in the Amended Warrants shares issuable upon the exercise of the Amended Warrants.

(3) I have had the opportunity to review the current business prospects, financial condition and operating history of the Company as set forth or incorporated by reference in the Offer to Amend and Exercise; and

(4) I have had the opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the Offer to Amend and Exercise and I have received all the information I consider necessary or appropriate for deciding whether to accept the Offer to Amend and Exercise.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

If you execute the election above to amend and exercise your Original Warrants and return this signature page, your Original Warrants will be deemed amended and exercised in accordance with the terms and conditions of the applicable Amended Warrant.

You must complete and sign the following exactly as your name appears on your Original Warrants. If the signature is by a trustee, executor, administrator, guardian, attorney-in-fact or another person acting in a fiduciary or representative capacity, please set forth the signatory's full title and include with this Election to Participate and Exercise Warrant proper evidence of the authority of such person to act in such capacity.

Date: _____

By:

(Signature)

(Print name)

(Title, if applicable)

Address:

Telephone:

Fax:

Tax ID/SSN:

INSTRUCTIONS FOR DELIVERY

Your right to participate in the Offer to Amend and Exercise will automatically expire if you do not properly elect to participate on or before the Expiration Date of December 17, 2012, as may be extended in the Company's sole discretion. The Company will not accept any alternative or contingent amendments. By execution this Election to Participate and Exercise Warrant, you waive any right to receive any notice of the acceptance of the Amended Warrants, except as provided in the Offer to Amend and Exercise. To effect your acceptance of the Offer to Amend and Exercise you must:

- (1) Complete, sign and return this Election to Participate and Exercise Warrant.
- (2) Tender your Original Warrants or, if you are unable to locate your Original Warrant, complete and sign an Affidavit of Lost Warrant (attached hereto) for each Original Warrant to be exercised.
- (3) Complete, sign and return the Accredited Investor Questionnaire (attached hereto).
- (4) Pay the exercise price applicable to your Amended Warrant (\$0.80 x number of shares to be exercised) by check or by wire transfer pursuant to the wire transfer instructions set forth below.

The Election to Participate and Exercise Warrant, Original Warrants (and/or Affidavit of Lost Warrant), Accredited Investor Questionnaire along with the exercise price must be received at the address below, on or before the Expiration Date of 5:00 pm (Pacific time) on December 17, 2012, as may be extended by the Company in its sole discretion.

ADDRESS: Organovo Holdings, Inc.
6275 Nancy Ridge Drive
San Diego, CA 92121
Attn: Corporate Secretary
Tel. No. (858) 550-9994
Fax No. (858) 550-9948

**WIRE TRANSFER
INSTRUCTIONS FOR
EXERCISE OF AMENDED
WARRANTS:**

Domestic:
Wells Fargo Bank, N.A.
420 Montgomery Street
San Francisco, CA 94104
ABA Routing No. 121000248
Checking Account No. 5357976199

[_____]
[NAME OF SENDER]

International:
Wells Fargo Bank, N.A.
420 Montgomery Street
San Francisco, CA 94104
ABA Routing No. 121000248
Checking Account No. 5357976199
SWIFT Code: WFBIUS6WFFX (for funds from
Int'l)

[_____]
[NAME OF SENDER]

Delivery to an address other than as set forth above will not constitute a valid delivery.

AFFIDAVIT OF LOSS AND INDEMNIFICATION AGREEMENT

The Holder (as defined below) hereby represents, warrants and agrees as follows:

1. The following described instrument of Organovo Holdings, Inc., a Delaware corporation (the “**Company**”) was lost or stolen:

Common Stock Purchase Warrant No. _____ to purchase _____ shares of common stock of Company, dated _____, _____ (the “**Original Warrant**”), and registered in the name of _____ (“**Holder**”);

2. Holder is the sole and unconditional record owner of the Original Warrant.

3. That neither the Original Warrant nor any interests therein have been sold, assigned, endorsed, transferred, deposited under any agreement, hypothecated, pledged, or disposed of in any manner by or on behalf of Holder; that neither Holder nor anyone on Holder’s behalf has signed any power of attorney, any stock power or any other assignment or authorization respecting the Original Warrant; and that no person, firm or corporation has any right, title, claim, equity or interest in, to or respecting the Original Warrant, except Holder as the sole owner.

4. That this Affidavit of Loss and Indemnification Agreement (the “**Affidavit**”) is made for the purpose of inducing the Company to accept the Holder’s Original Warrant in connection with the Holder’s election to participate in the Company’s Offer to Amend and Exercise, dated November 16, 2012, as amended or supplemented and to exercise such Original Warrant (the “**Offer**”).

5. Holder hereby agrees to immediately surrender the Original Warrant to the Company for cancellation without consideration should it at any time come into the possession or control of Holder.

6. To induce the Company to accept this Affidavit in place of the lost Original Warrant in connection with Holder’s acceptance of the Offer, Holder and its successors and assigns shall at all times indemnify and hold harmless the Company and its directors, officers, agents, successors and assigns from and against any and all claims, actions and suits, whether groundless or otherwise, and from and against any and all losses, damages, judgments, costs, charges, counsel fees, payments, expenses and liabilities whatsoever, which any of such indemnitees at any time shall or may sustain or incur (a) by reason of the issuance of a replacement warrant, if any or (b) by reason of any claim which may be made in respect of the Original Warrant, or (c) by reason of any payment, transfer, exchange, delivery or other act which any indemnitee hereunder may make or do in respect of the Original Warrant or a replacement warrant, if any, or any shares of common stock issued upon exercise thereof whether made or done through accident, oversight or neglect, or whether made or done upon presentation thereof without contesting, inquiring into or litigating the propriety of such payment, transfer, exchange, delivery or other act, or (d) by reason of any other matter or thing arising out of the recognition of the aforesaid request of Holder for the issuance of the Original Warrant or a replacement warrant, if any.

7. It is understood and agreed that in case the Original Warrant shall be recovered by anyone, then this Affidavit may be immediately enforced. This Affidavit shall be deemed a continuing obligation and successive recoveries may be had thereon for the various matters in respect of which any indemnitee shall from time to time become entitled to be indemnified.

This Affidavit shall be governed by the laws of the State of New York as such laws are applied to contracts between California residents entered into and to be performed entirely in New York.

Dated: _____, 2012.

HOLDER

(Signature)

(Printed Name)

(Title, if Holder is not a natural person)

ACCREDITED INVESTOR QUESTIONNAIRE

The undersigned understands that the purpose of this Questionnaire is to permit Organovo Holdings, Inc. (“**Organovo**”) to determine whether the undersigned is an “accredited investor” as such term is defined in Rule 501(a) promulgated under the Securities Act of 1933, as amended (the “**Act**”). The undersigned represents to you that (i) the information contained herein is complete and accurate and may be relied upon by Organovo, and (ii) the undersigned will notify Organovo immediately of any change in any of such information.

All information furnished is for the sole use of Organovo and its counsel and will be held in confidence by Organovo and its counsel, except that this Questionnaire may be furnished to such parties as Organovo deems desirable to establish compliance with federal or state securities laws.

A. For Individuals:

The undersigned individual is an “Accredited Investor” for one or more of the following reasons (check all that apply):

- ☐ The undersigned is an individual (not a partnership, corporation, etc.) whose individual net worth, or joint net worth with his or her spouse, presently exceeds \$1,000,000. For purposes of the foregoing, “net worth” shall be deemed to include all of your assets, liquid or illiquid (including such items as furnishings, automobile and restricted securities, but excluding the value of your primary residence) minus any liabilities (including such items as loans and other debts and liabilities, but excluding any mortgage on your primary residence to the extent that it does not exceed the fair market value of such residence).
- ☐ The undersigned is an individual (not a partnership, corporation, etc.) who had (i) an individual income in excess of \$200,000 or (ii) joint income together with their spouse in excess of \$300,000, in each of the two most recent years and reasonably expect to reach the same income level in the current year. For purposes of the foregoing, “income” is not limited to “adjusted gross income” as that term is defined for federal income tax purposes, but rather includes certain items of income which are deducted in computing “adjusted gross income”. For investors who are salaried employees, the gross salary of such investor, minus any significant expenses personally incurred by such investor in connection with earning the salary, plus any income from any other source including unearned income, is a fair measure of “income” for purposes of this question. For investors who are self-employed, “income” is generally construed to mean total revenues received during the calendar year minus significant expenses incurred in connection with earning such revenues.
- ☐ The undersigned is a director, executive officer, or general partner of the issuer of the securities being offered or sold, or any director, executive officer, or general partner of a general partner of that issuer.

The undersigned individual is not an “Accredited Investor” because none of the above apply.

☐

B. For Entities:

The undersigned is an “Accredited Investor” because the undersigned falls within at least one of the following categories (Check all appropriate lines):

- ☐ (i) a bank as defined in Section 3(a)(2) of the Securities Act of 1933, as amended (the “Securities Act”) or a savings and loan association or other institution as defined in Section 3(a)(5)(A) of the Act whether acting in its individual or fiduciary capacity;
- ☐ (ii) a broker-dealer registered pursuant to Section 15 of the Securities Exchange Act of 1934, as amended;
- ☐ (iii) an insurance company as defined in Section 2(a)(13) of the Act;

- ☐ (iv) an investment company registered under the Investment Company Act of 1940, as amended (the “Investment Company Act”) or a business development company as defined in Section 2(a)(48) of the Investment Act;
- ☐ (v) a Small Business Investment Company licensed by the U.S. Small Business Investment Act of 1958, as amended;
- ☐ (vi) a plan established and maintained by a state, its political subdivisions, or any agency or instrumentality of a state or its political subdivisions, for the benefit of its employees, where such plan has total assets in excess of \$5,000,000;
- ☐ (vii) an employee benefit plan within the meaning of Title I of the Employee Retirement Income Security Act of 1974, as amended (the “Employee Act”), where the investment decision is made by a plan fiduciary, as defined in Section 3(21) of the Employee Act, which is either a bank, savings and loan association, insurance company, or registered investment adviser, or an employee benefit plan that has total assets in excess of \$5,000,000 or a self-directed plan the investment decisions of which are made solely by persons that are accredited investors.
- ☐ (viii) a private business development company, as defined in Section 202(a)(22) of the Investment Advisers Act of 1940 as amended;
- ☐ (ix) an organization described in Section 501(c)(3) of the Internal Revenue Code, a corporation, a Massachusetts or similar business trust, or a partnership, not formed for the specific purpose of acquiring the securities offered, with total assets in excess of \$5,000,000;
- ☐ (x) a trust, with total assets in excess of \$5,000,000, not formed for the specific purpose of acquiring the securities offered, whose purchase is directed by a “sophisticated” person, who has such knowledge and experience in financial and business matters that he is capable of evaluating the merits and risks of the prospective investment;
- ☐ (xi) an entity in which all of the equity investors are persons or entities described above.

☐ The undersigned is an entity all the equity owners of which are “accredited investors” within one or more of the above categories. If relying upon this Category alone, each equity owner must complete a separate copy of this Questionnaire. (Describe the entity below.)

The undersigned entity is not an “Accredited Investor” because none of the above apply.

☐

The foregoing representations are true and accurate as of the date hereof.

Dated: _____, 2012

Name of Investor

Signature

Printed Name

Title (if applicable)

Name of joint investor or other person whose
signature is required

Signature

Title (if applicable)

**NOTICE OF WITHDRAWAL OF AMENDMENT OF ORIGINAL WARRANTS AND EXERCISE OF
AMENDED WARRANTS
PURSUANT TO THE OFFER TO AMEND AND EXERCISE WARRANTS TO PURCHASE COMMON
STOCK DATED NOVEMBER 16, 2012**

THE OFFER AND WITHDRAWAL RIGHTS EXPIRE AT 5:00 P.M. (PDT), ON DECEMBER 17, 2012, UNLESS THE OFFER IS EXTENDED

To: Organovo Holdings, Inc.
6275 Nancy Ridge Drive
San Diego, CA 92121
Attn: Corporate Secretary
Fax. No. 858.550.9948

**DELIVERY OF THIS NOTICE OF WITHDRAWAL TO AN ADDRESS OTHER THAN AS SET FORTH ABOVE OR TRANSMISSION VIA
FACSIMILE TO A NUMBER OTHER THAN AS SET FORTH ABOVE WILL NOT CONSTITUTE A VALID DELIVERY.**

I previously received a copy of Organovo Holdings, Inc. (the “**Company**”)’s Offer to Amend and Exercise Warrants to Purchase Common Stock, dated November 16, 2012, and any amendments thereto (the “**Offer to Amend and Exercise**”). I elected to participate in the Offer to Amend and Exercise, delivered an executed Election to Participate and Exercise Warrants.

I hereby irrevocably withdraw my previously submitted Election to Participate and Exercise Warrants and reject the Offer to Amend and Exercise.

I understand that by rejecting the Offer to Amend and Exercise, my Original Warrants will not be amended or exercised pursuant to the terms of the Offer to Amend and Exercise. I waive any right to receive any notice of the acceptance of this Notice of Withdrawal.

All capitalized terms used but not defined herein shall have the meanings ascribed to the Offer to Amend and Exercise.

Date: _____, 2012

(Signature of Warrant Holder)

(Name of Signatory)

(Title, if Warrant Holder is not a natural person)

Telephone: _____

Fax: _____

All questions as to the validity, form, eligibility (including time of receipt) and acceptance of any Notice of Withdrawal will be determined by the Company in its discretion, which determination shall be final and binding on all parties. The Company reserves the right to reject any or all Notices of Withdrawal that the Company determines not to be in proper form or the acceptance of which may, in the opinion of the Company's counsel, be unlawful. The Company also reserves the right to waive any of the conditions of the Offer to Amend and Exercise and any defect or irregularity in the Notice of Withdrawal, and the Company's interpretation of the terms of the Offer to Amend and Exercise (including these instructions) will be final and binding on all parties. No Notice of Withdrawal will be deemed to be properly made until all defects and irregularities have been cured or waived. Unless waived, any defects or irregularities in connection with any Notice of Withdrawal must be cured within such time as the Company shall determine. Neither the Company nor any other person is or will be obligated to give notice of any defects or irregularities in any Notice of Withdrawal, and no person will incur any liability for failure to give any such notice.

IMPORTANT: THIS NOTICE OF WITHDRAWAL MUST BE RECEIVED BY THE COMPANY ON OR PRIOR TO THE TIME AND DATE OF EXPIRATION OF THE OFFER TO AMEND AND EXERCISE AT 5:00 P.M. (PACIFIC TIME) ON DECEMBER 17, 2012, AS MAY BE EXTENDED BY THE COMPANY IN ITS SOLE DISCRETION.

EXHIBIT A-1
FIRST AMENDMENT TO
WARRANT TO PURCHASE COMMON STOCK

This First Amendment (the “**Amendment**”) to Warrant to Purchase Common Stock (the “**Warrant**”), is made and entered into effective as of November 16, 2012 (the “**Effective Date**”), by and between Organovo Holdings, Inc., a Delaware corporation (the “**Company**”) and the undersigned (the “**Holder**”). Capitalized terms used but not otherwise defined herein shall have the same meanings as set forth in the Warrant.

WHEREAS, in connection with the Company’s tender offer with respect to the amendment and exercise of certain issued and outstanding warrants to purchase shares of common stock of the Company, including the Warrant, as set forth in that certain Offer to Amend and Exercise Warrants to Purchase Common Stock of Organovo Holdings, Inc. dated November 16, 2012, a copy of which has been delivered to the Holder (the “**Offer to Amend and Exercise**”), the Company and the Holder desire to amend the Warrant as set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, the parties hereby agree as follows:

1. Expiration Date. The Expiration Date contained in the first unnumbered paragraph of the Warrant is hereby amended and restated to be 5:00 p.m., Pacific time, on December 17, 2012, as may be extended by the Company in its sole discretion. In addition, the reference to “Void After: [], 2016” in the heading of the Warrant shall be deleted in its entirety.

2. Exercise Price. The Exercise Price contained in the second unnumbered paragraph of the Warrant is hereby amended and restated to be \$0.80 per share of Common Stock.

3. Exercise Period. Section 1(a) of the Warrant is hereby amended and restated in its entirety as follows:

“(a) Exercise Period. The Holder may exercise this Warrant in whole or in part on any Business Day on or before 5:00 P.M., Pacific time, on the Expiration Date, at which time this Warrant shall become void and of no value.”

4. Exercise Procedures. Section 1(b) of the Warrant is hereby amended and restated in its entirety as follows:

“(b) Exercise Procedures.

(i) The purchase rights represented by this Warrant shall be deemed exercised by delivery before the Expiration Date of all of the following: (i) a signed copy of the Election to Participate and Exercise Warrant (as defined in that certain Offer to Amend and Exercise Warrants to Purchase Common Stock of Organovo Holdings, Inc. dated November 16, 2012 (the “**Offer to Amend and Exercise**”), (ii) a signed copy of an Accredited Investor Questionnaire (as defined in the Offer to Amend and Exercise), (iii) the original copy of this Warrant (or an Affidavit of Lost Warrant in the form required by the Offer to Amend and Exercise) for cancellation, and (iv) cash in the amount equal to \$0.80 per share multiplied by the number of Warrant Shares the Holder elects to purchase (collectively, the “**Acceptance and Exercise Documents**”). The cash may be tendered in the form of a check payable to Organovo Holdings, Inc. or by wire transfer to the Company’s account as set forth in the Election to Participate and Exercise Warrant. Each of the Acceptance and Exercise Documents must be properly delivered, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary. This Amendment shall be deemed ineffective and null and void if all of the Acceptance and Exercise Documents are not delivered in accordance herewith prior to the Expiration Date.

(ii) Upon the exercise of this Warrant in compliance with the provisions of Section 1(b)(i), as promptly as reasonably practicable, the Company shall issue and deliver to the person or persons entitled to receive the same a certificate or certificates for that number of Warrant Shares issuable upon

such exercise, but not later than prior to the expiration of the Lock-Up Period (as defined in Section 19 hereof). In the event that the rights under this Warrant are exercised in part and have not expired, the Company shall execute and deliver a new Warrant reflecting the number of Warrant Shares that remain subject to this Warrant.

(iii) No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the rights under this Warrant. In lieu of such fractional share to which the Holder would otherwise be entitled, the Company shall make a cash payment equal to the Exercise Price multiplied by such fraction.

5. Partial Exercise. Section 1(c) of the Warrant is hereby deleted in its entirety.

6. Adjustment of Exercise Price Upon Issuance of Additional Shares of Common Stock. Section 3(d) of the Warrant is hereby deleted in its entirety.

7. Lock-Up Period. The Warrant is hereby amended by adding a new Section 19 as follows:

“19. Lock-Up Period.

(a) Lock-Up Restrictions. Holder agrees not to sell, make any Short Sale (as defined below) of, loan, grant any option for the purchase of, or otherwise dispose of any of the Shares issuable upon the exercise of this Warrant without the prior written consent of the Company for a period of time commencing on your exercise date and ending on the later of (i) the date that is twenty (20) days after exercise of this Warrant or (ii) the date that is five business days after the Expiration Date (the “**Lock-Up Period**”). For the avoidance of doubt, Holder may transfer during the Lock-Up Period any such Shares to any of its Affiliates provided that such Affiliate(s) agree to be bound by the same lock up restrictions.

(b) Stop-Transfer Instructions. In order to enforce this Section 19, the Company may impose stop-transfer instructions with respect to the Shares of Holder (and the shares of every other Holder subject to the restrictions in this Section 19).”

8. Short Sales. The Warrant is hereby amended by adding a new Section 20 as follows:

“20. Short Sales. Until the expiration of the Lock-Up Period, other than with respect to the transactions contemplated herein, neither the Holder nor any Affiliate of such Holder which (x) had knowledge of the transactions contemplated hereby, (y) has or shares discretion relating to such Holder’s investments or trading or information concerning such Holder’s investments, including in respect of the shares and warrants, and (z) is subject to such Holder’s review or input concerning such Affiliate’s investments or trading (collectively, “**Trading Affiliates**”) will directly or indirectly, alone or with any individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind (collectively “**Persons**”), acting on behalf of or pursuant to any understanding with such Holder or Trading Affiliate, effect or agree to effect any Short Sales (as defined below) involving the Company’s shares of common stock or other securities of the Company. Notwithstanding the foregoing, in the case of a Holder and/or Trading Affiliate that is, individually or collectively, a multi-managed investment bank or vehicle whereby separate portfolio managers manage separate portions of such Holder’s or Trading Affiliate’s assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Holder’s or Trading Affiliate’s assets, the covenants set forth above shall apply only with respect to the portion of assets managed by the portfolio manager that have knowledge about the transactions contemplated by this Warrant. For purposes hereof, “**Short Sale**” shall include, without limitation, all “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, whether or not against the box, and all types of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements (including on a total return basis), or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers.”

9. Necessary Acts. Each party to this Amendment hereby agrees to perform any further acts and to execute and deliver any further documents that may be necessary or required to carry out the intent and provisions of this Amendment and the transactions contemplated hereby.

10. Governing Law. This Amendment shall be governed, construed and interpreted in accordance with the laws of the State of New York, without giving effect to principles of conflicts of law.

11. Continued Validity. Except as otherwise expressly provided herein, the Warrant shall remain in full force and effect.

12. Approval of Amendment; No Execution Required. **By Holder's execution and delivery of an Election to Participate and Exercise Warrant together with the other Acceptance and Exercise Documents in accordance with the terms of the Offer to Amend and Exercise, each of the Company and the Holder shall be deemed to have authorized, approved and executed this Amendment.**

EXHIBIT A-2

Investor Warrant

**FIRST AMENDMENT TO
WARRANT TO PURCHASE COMMON STOCK**

This First Amendment (the “**Amendment**”) to Warrant to Purchase Common Stock (the “**Warrant**”), is made and entered into effective as of November 16, 2012 (the “**Effective Date**”), by and between Organovo Holdings, Inc., a Delaware corporation (the “**Company**”) and the undersigned (the “**Holder**”). Capitalized terms used but not otherwise defined herein shall have the same meanings as set forth in the Warrant.

WHEREAS, in connection with the Company’s tender offer with respect to the amendment and exercise of certain issued and outstanding warrants to purchase shares of common stock of the Company, including the Warrant, as set forth in that certain Offer to Amend and Exercise Warrants to Purchase Common Stock of Organovo Holdings, Inc. dated November 16, 2012, a copy of which has been delivered to the Holder (the “**Offer to Amend and Exercise**”), the Company and the Holder desire to amend the Warrant as set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, the parties hereby agree as follows:

1. Expiration Date. The Expiration Date contained in the first unnumbered paragraph of the Warrant is hereby amended and restated to be 5:00 p.m., Pacific time, on December 17, 2012, as may be extended by the Company in its sole discretion. In addition, the reference to “Void After: [], 201 ” in the heading of the Warrant shall be deleted in its entirety.

2. Exercise Price. The Exercise Price contained in the second unnumbered paragraph of the Warrant is hereby amended and restated to be \$0.80 per share of Common Stock.

3. Exercise Period. Section 1(a) of the Warrant is hereby amended and restated in its entirety as follows:

“(a) Exercise Period. The Holder may exercise this Warrant in whole or in part on any Business Day on or before 5:00 P.M., Pacific time, on the Expiration Date, at which time this Warrant shall become void and of no value.”

4. Exercise Procedures. Section 1(b) of the Warrant is hereby amended and restated in its entirety as follows:

“(b) Exercise Procedures.

(i) The purchase rights represented by this Warrant shall be deemed exercised by delivery before the Expiration Date of all of the following: (i) a signed copy of the Election to Participate and Exercise Warrant (as defined in that certain Offer to Amend and Exercise Warrants to Purchase Common Stock of Organovo Holdings, Inc. dated November 16, 2012 (the “**Offer to Amend and Exercise**”), (ii) a signed copy of an Accredited Investor Questionnaire (as defined in the Offer to Amend and Exercise), (iii) the original copy of this Warrant (or an Affidavit of Lost Warrant in the form required by the Offer to Amend and Exercise) for cancellation, and (iv) cash in the amount equal to \$0.80 per share multiplied by the number of Warrant Shares the Holder elects to purchase (collectively, the “**Acceptance and Exercise Documents**”). The cash may be tendered in the form of a check payable to Organovo Holdings, Inc. or by wire transfer to the Company’s account as set forth in the Election to Participate and Exercise Warrant. Each of the Acceptance and Exercise Documents must be properly delivered, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary. This Amendment shall be deemed ineffective and null and void if all of the Acceptance and Exercise Documents are not delivered in accordance herewith prior to the Expiration Date.

(ii) Upon the exercise of this Warrant in compliance with the provisions of Section 1(b)(i), as promptly as reasonably practicable, the Company shall issue and deliver to the person or persons

entitled to receive the same a certificate or certificates for that number of Warrant Shares issuable upon such exercise, but not later than five (5) business days prior to the expiration of the Lock-Up Period (as defined in Section 20 hereof). In the event that the rights under this Warrant are exercised in part and have not expired, the Company shall execute and deliver a new Warrant reflecting the number of Warrant Shares that remain subject to this Warrant.

(iii) No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the rights under this Warrant. In lieu of such fractional share to which the Holder would otherwise be entitled, the Company shall make a cash payment equal to the Exercise Price multiplied by such fraction.

5. Partial Exercise. Section 1(c) of the Warrant is hereby deleted in its entirety.

6. Adjustment of Exercise Price Upon Issuance of Additional Shares of Common Stock. Section 3(d) of the Warrant is hereby deleted in its entirety.

7. Lock-Up Period. The Warrant is hereby amended by adding a new Section 20 as follows:

“20. Lock-Up Period.

(a) Lock-Up Restrictions. Holder agrees not to sell, make any Short Sale (as defined below) of, loan, grant any option for the purchase of, or otherwise dispose of any of the Shares issuable upon the exercise of this Warrant without the prior written consent of the Company for a period of time commencing on your exercise date and ending on the later of (i) the date that is twenty (20) days after exercise of this Warrant or (ii) the date that is five business days after the Expiration Date (the “**Lock-Up Period**”). For the avoidance of doubt, Holder may transfer during the Lock-Up Period any such Shares to any of its Affiliates provided that such Affiliate(s) agree to be bound by the same lock up restrictions.

(b) Stop-Transfer Instructions. In order to enforce this Section 20, the Company may impose stop-transfer instructions with respect to the Shares of Holder (and the shares of every other Holder subject to the restrictions in this Section 20).”

8. Short Sales. The Warrant is hereby amended by adding a new Section 21 as follows:

“20. Short Sales. Until the expiration of the Lock-Up Period, other than with respect to the transactions contemplated herein, neither the Holder nor any Affiliate of such Holder which (x) had knowledge of the transactions contemplated hereby, (y) has or shares discretion relating to such Holder’s investments or trading or information concerning such Holder’s investments, including in respect of the shares and warrants, and (z) is subject to such Holder’s review or input concerning such Affiliate’s investments or trading (collectively, “**Trading Affiliates**”) will directly or indirectly, alone or with any individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind (collectively “**Persons**”), acting on behalf of or pursuant to any understanding with such Holder or Trading Affiliate, effect or agree to effect any Short Sales (as defined below) involving the Company’s shares of common stock or other securities of the Company. Notwithstanding the foregoing, in the case of a Holder and/or Trading Affiliate that is, individually or collectively, a multi-managed investment bank or vehicle whereby separate portfolio managers manage separate portions of such Holder’s or Trading Affiliate’s assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Holder’s or Trading Affiliate’s assets, the covenants set forth above shall apply only with respect to the portion of assets managed by the portfolio manager that have knowledge about the transactions contemplated by this Warrant. For purposes hereof, “**Short Sale**” shall include, without limitation, all “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, whether or not against the box, and all types of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements (including on a total return basis), or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers.”

9. Necessary Acts. Each party to this Amendment hereby agrees to perform any further acts and to execute and deliver any further documents that may be necessary or required to carry out the intent and provisions of this Amendment and the transactions contemplated hereby.

10. Governing Law. This Amendment shall be governed, construed and interpreted in accordance with the laws of the State of New York, without giving effect to principles of conflicts of law.

11. Continued Validity. Except as otherwise expressly provided herein, the Warrant shall remain in full force and effect.

12. Approval of Amendment; No Execution Required. **By Holder's execution and delivery of an Election to Participate and Exercise Warrant together with the other Acceptance and Exercise Documents in accordance with the terms of the Offer to Amend and Exercise, each of the Company and the Holder shall be deemed to have authorized, approved and executed this Amendment.**

EXHIBIT A-3

Private Warrant

FIRST AMENDMENT TO
WARRANT TO PURCHASE SHARES

This First Amendment (the “**Amendment**”) to Warrant to Purchase Shares (the “**Warrant**”), is made and entered into effective as of November 16, 2012 (the “**Effective Date**”), by and between Organovo Holdings, Inc., a Delaware corporation (the “**Company**”) and the undersigned (the “**Holder**”). Capitalized terms used but not otherwise defined herein shall have the same meanings as set forth in the Warrant.

WHEREAS, in connection with the Company’s tender offer with respect to the amendment and exercise of certain issued and outstanding warrants to purchase shares of common stock of the Company, including the Warrant, as set forth in that certain Offer to Amend and Exercise Warrants to Purchase Common Stock of Organovo Holdings, Inc. dated November 16, 2012, a copy of which has been delivered to the Holder (the “**Offer to Amend and Exercise**”), the Company and the Holder desire to amend the Warrant as set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, the parties hereby agree as follows:

1. Exercise Price. Section 1(c) of the Warrant is hereby amended and restated in its entirety as follows:

“(c) **Exercise Price**. The exercise price per Share shall be \$0.80 per Share, subject to adjustment pursuant hereto (the “**Exercise Price**”).”

2. Exercise of the Warrant. Section 2, Exercise of the Warrant, is hereby amended and restated in its entirety as follows:

“2. **Exercise of the Warrant**.

(a) **Exercise**. The purchase rights represented by this Warrant shall be deemed exercised by delivery before the Expiration Date (as defined in Section 8 hereof) of all of the following: (i) a signed copy of the Election to Participate and Exercise Warrant (as defined in that certain Offer to Amend and Exercise Warrants to Purchase Common Stock of Organovo Holdings, Inc. dated November 16, 2012 (the “**Offer to Amend and Exercise**”), (ii) a signed copy of an Accredited Investor Questionnaire (as defined in the Offer to Amend and Exercise), (iii) the original copy of this Warrant (or an Affidavit of Lost Warrant in the form required by the Offer to Amend and Exercise) for cancellation, and (iv) cash in the amount equal to \$0.80 per share multiplied by the number of Shares the Holder elects to purchase (collectively, the “**Acceptance and Exercise Documents**”). The cash may be tendered in the form of a check payable to Organovo Holdings, Inc. or by wire transfer to the Company’s account as set forth in the Election to Participate and Exercise Warrant. Each of the Acceptance and Exercise Documents must be properly delivered, before the Expiration Date to: Organovo Holdings, Inc., 6275 Nancy Ridge Drive, San Diego, CA 92121, Attn: Corporate Secretary. This Amendment shall be deemed ineffective and null and void if all of the Acceptance and Exercise Documents are not delivered in accordance herewith prior to the Expiration Date.

(b) **Stock Certificates**. Upon the exercise of this Warrant in compliance with the provisions of this Section 2, as promptly as reasonably practicable, the Company shall issue and deliver to the person or persons entitled to receive the same a certificate or certificates for that number of Shares issuable upon such exercise, but not later than prior to the expiration of the Lock-Up Period (as defined in Section 13 hereof). In the event that the rights under this Warrant are exercised in part and have not expired, the Company shall execute and deliver a new Warrant reflecting the number of Shares that remain subject to this Warrant.

(c) **No Fractional Shares or Scrip**. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the rights under this Warrant. In lieu of such fractional share to which the Holder would otherwise be entitled, the Company shall make a cash payment equal to the Exercise Price multiplied by such fraction.

3. Expiration of the Warrant. Section 8 of the Warrant is hereby amended and restated in its entirety as follows:

“**8. Expiration of the Warrant.** This Warrant shall expire and shall no longer be exercisable as of 5:00 p.m., Pacific time, on December 17, 2012, as may be extended by the Company in its sole discretion (the “**Expiration Date**”).”

4. Lock-Up Period. The Warrant is hereby amended by adding a new Section 13 as follows:

“**13. Lock-Up Period.**

(a) **Lock-Up Restrictions.** Holder agrees not to sell, make any Short Sale (as defined below) of, loan, grant any option for the purchase of, or otherwise dispose of any of the Shares issuable upon the exercise of this Warrant without the prior written consent of the Company for a period of time commencing on your exercise date and ending on the later of (i) the date that is twenty (20) days after exercise of this Warrant or (ii) the date that is five business days after the Expiration Date (the “**Lock-Up Period**”). For the avoidance of doubt, Holder may transfer during the Lock-Up Period any such Shares to any of its Affiliates provided that such Affiliate(s) agree to be bound by the same lock up restrictions.

(b) **Stop-Transfer Instructions.** In order to enforce this Section 13, the Company may impose stop-transfer instructions with respect to the Shares of Holder (and the shares of every other Holder subject to the restrictions in this Section 13).”

5. Short Sales. The Warrant is hereby amended by adding a new Section 14 as follows:

“**14. Short Sales.** Until the expiration of the Lock-Up Period, other than with respect to the transactions contemplated herein, neither the Holder nor any Affiliate of such Holder which (x) had knowledge of the transactions contemplated hereby, (y) has or shares discretion relating to such Holder’s investments or trading or information concerning such Holder’s investments, including in respect of the shares and warrants, and (z) is subject to such Holder’s review or input concerning such Affiliate’s investments or trading (collectively, “**Trading Affiliates**”) will directly or indirectly, alone or with any individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind (collectively “**Persons**”), acting on behalf of or pursuant to any understanding with such Holder or Trading Affiliate, effect or agree to effect any Short Sales (as defined below) involving the Company’s shares of common stock or other securities of the Company. Notwithstanding the foregoing, in the case of a Holder and/or Trading Affiliate that is, individually or collectively, a multi-managed investment bank or vehicle whereby separate portfolio managers manage separate portions of such Holder’s or Trading Affiliate’s assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Holder’s or Trading Affiliate’s assets, the covenants set forth above shall apply only with respect to the portion of assets managed by the portfolio manager that have knowledge about the transactions contemplated by this Warrant. For purposes hereof, “**Short Sale**” shall include, without limitation, all “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, whether or not against the box, and all types of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements (including on a total return basis), or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers.”

6. Necessary Acts. Each party to this Amendment hereby agrees to perform any further acts and to execute and deliver any further documents that may be necessary or required to carry out the intent and provisions of this Amendment and the transactions contemplated hereby.

7. Governing Law. This Amendment shall be governed, construed and interpreted in accordance with the laws of the State of California, without giving effect to principles of conflicts of law.

8. Continued Validity. Except as otherwise expressly provided herein, the Warrant shall remain in full force and effect.

9. Approval of Amendment; No Execution Required. **By Holder's execution and delivery of an Election to Participate and Exercise Warrant together with the other Acceptance and Exercise Documents in accordance with the terms of the Offer to Amend and Exercise, each of the Company and the Holder shall be deemed to have authorized, approved and executed this Amendment.**

ORGANOVO HOLDINGS, INC.

**6275 Nancy Ridge Drive
San Diego, CA 92121**

WARRANT AGENT AGREEMENT

This Warrant Agent Agreement, dated November 16, 2012 (the “Agreement”), is entered into by and among Aegis Capital Corp. (the “Warrant Agent”) and Organovo Holdings, Inc. (“Organovo”).

WITNESSETH:

WHEREAS, Organovo has offered to amend, upon the terms set forth therein (the “Offer to Amend”), the outstanding common stock purchase warrants to purchase shares of Organovo’s common stock, par value \$0.001 per share (the “Common Stock”) issued to: (i) investors participating in Organovo’s bridge financing completed in November 2011 (the “Bridge Warrants”), (ii) the investors participating in Organovo’s private placement financings closed on February 8, 2012, February 29, 2012 and March 16, 2012 (the “Investor Warrants”), and (iii) investors in a convertible promissory note financing of Organovo, Inc. closed during 2011 (the “Private Warrants”, and collectively with the Investor Warrants and the Bridge Warrants, the “Original Warrants”).

WHEREAS, pursuant to the Offer to Amend, the Original Warrants will be amended (the “Amended Warrants”) to: (i) reduce the exercise price of the Original Warrants from \$1.00 per share to \$0.80 per share of Common Stock in cash, (ii) provide that the Amended Warrants must be exercised by no later than the expiration date of the Offer to Amend, (iii) delete the price-based anti-dilution provisions contained in the Original Warrants; and (iv) restrict the sale of shares of common stock acquired upon exercise of the Bridge and Investor Warrants for a twenty day period after the expiration date of the Offer to Amend.

WHEREAS, the terms of the Original Warrants held by holders who do not elect to participate in the Offer to Amend will retain in all respects their original terms and provisions.

WHEREAS, Organovo has or will file a Tender Offer on Form SC TO-I with the Securities and Exchange Commission (the “SEC”), including all required exhibits thereto (collectively, the “Offering Materials”).

WHEREAS, the Company has filed a Registration Statement on Form S-1 (the “Registration Statement”) with the SEC which, among other things, registers the Common Stock issuable upon exercise of the Original Warrants for resale under the Securities Act of 1933, as amended (the “Securities Act”).

WHEREAS, Organovo desires to engage the Warrant Agent pursuant to the terms of this Agreement, and the Warrant Agent is willing to be so engaged, to solicit the holders of the Original Warrants to participate in the Offer to Amend and to exercise their Amended Warrants.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual promises hereinafter set forth, the parties hereto agree as follows:

1. Engagement. Organovo hereby engages and appoints the Warrant Agent as, and the Warrant Agent hereby agrees to serve as, the exclusive Warrant Agent for Organovo in connection with the Offer to Amend. Warrant Agent shall, consistent with its obligations under the Securities Act, the Securities Exchange Act of 1934 (the “Exchange Act”), and the applicable rules and regulations of the SEC thereunder, the rules and regulations of Financial Industry Regulatory Authority, Inc., and the applicable state securities laws and regulations, use its reasonable commercial efforts to maximize the number of holders of Original Warrants who elect to participate in the Offer to Amend and exercise their Amended Warrants, including appropriate communications with the record owners and beneficial owners of the Original Warrants, as well as with said owners’ brokers, agents or other representatives. Pursuant to its engagement, the Warrant Agent may, on behalf of the Company, assist non-participating holders of Original Warrants who desire to transfer their Original Warrants (“Transferred Warrants”) to third parties.

2. Offering Materials. The Company shall cause copies of the Offering Materials relating to the Offer to Amend to be delivered to each Original Warrant holder, and the Warrant Agent shall have no responsibility in this regard. The Warrant Agent is not authorized to furnish to holders of Original Warrants any information other than that contained in the Offering Materials or in such other material as may be provided by Organovo to holders of the Original Warrants. The Warrant Agent will be supplied without charge with a reasonable number of Offering Materials. Given the short duration of the Offer to Amend, the Offering Materials shall include an expedited and abbreviated procedure for holders of Original Warrants who are unable to locate their agreements evidencing such Original Warrants (including, but not limited to, dispensing with any requirements for a separate Affidavit of Loss and indemnity/surety bond).

3. Offer to Amend Acceptance Procedures. The Offering Materials shall set forth the procedure for holders of Original Warrants to participate in the Offer to Amend and to exercise their Amended Warrants.

4. Compensation.

A. Fee. Subject to the valid participation in the Offer to Amend and the exercise of the Amended Warrants by a holder of an Original Warrant (including a transferee), the Warrant Agent is entitled to receive from Organovo a fee (the “Solicitation Fee”) equal to two percent (2%) of the cash Organovo receives for each exercise of an Amended Warrant.

B. Expenses. Whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated, Organovo agrees to reimburse the Warrant Agent for any and all of its reasonable out-of-pocket expenses, including fees and disbursements of its counsel incurred by the Warrant Agent in connection with the Warrant Agent’s performance of this Agreement, including a \$35,000 non-accountable expense allowance (the “Expense Payment”); provided, however, that once the aggregate expenses the Warrant Agent seeks reimbursement for pursuant to this Section 4.B exceeds \$35,000, the Warrant Agent must: (i) provide invoices to Organovo for all expenses reimbursable pursuant to this Section 4.B prior to seeking reimbursement from Organovo and (ii) obtain Organovo’s prior approval for any individual expenses in excess of \$2,500.

C. Timing of Payment. Within ten (10) days after the expiration date of the Amended Warrants, Organovo will deliver a notice to the Warrant Agent setting forth the number of Original Warrants which have been properly completed for exercise by holders of the Original Warrants and accepted by Organovo, together with payment of the Solicitation Fee and Expense Payment (provided any required invoices have been provided Organovo as set forth in Section 4.B above) and any documentation requested by the Warrant Agent.

5. Inspection of Records. During the period of the Offer to Amend and for thirty (30) days thereafter, the Warrant Agent may, at any time during business hours, examine the records of Organovo which relates to the Offer to Amend. Notwithstanding the foregoing, the Warrant Agent agrees not to use any confidential information concerning Organovo provided to the Warrant Agent by Organovo for any purposes other than those contemplated under this Agreement.

6. Post-Effective Amendment. As soon as practicable following the expiration of the Offer to Amend, Organovo shall (i) file a post-effective amendment (the “Post-Effective Amendment”) to the Registration Statement to register under the Securities Act the resale of the shares of Common Stock acquired upon the exercise of any Transferred Warrants and (ii) use commercially reasonable efforts to have the Post-Effective Amendment promptly declared effective by the SEC.

7. Termination. The term of this Agreement shall be for the longer of (i) six (6) months from and after the date first above written or (ii) the last to expire of the Amended Warrants; provided, however, Organovo may immediately terminate this Agreement if Adam Stern is no longer employed by the Warrant Agent or if Adam Stern is no longer the principal investment banker assigned to this engagement. Notwithstanding anything to the contrary contained herein, the obligations of Organovo to the Warrant Agent set forth in Sections 4 and 8 will survive any expiration or termination of this Agreement; provided, however, if this Agreement is terminated by

Organovo pursuant to this Section 7, Organovo shall only be required to pay the Expense Payment and that portion of the Solicitation Fee for any holders of Original Warrants who exercised their Amended Warrant prior to Organovo's notice of termination to the Warrant Agent.

8. Indemnification. In connection with Organovo's engagement of Warrant Agent, Organovo hereby agrees to indemnify and hold harmless Warrant Agent and its affiliates, and the respective directors, officers, shareholders, agents and employees of any of the foregoing, as well as each person who controls the Warrant Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the "Indemnified Persons"), from and against any and all claims, actions, suits, proceedings (including those of shareholders), damages, liabilities and expenses incurred by any of them (including the reasonable fees and expenses of counsel), (collectively a "Claim"), including costs of investigation or inquiry, which are (A) related to or arise out of (i) any actions taken or omitted to be taken (including any untrue statements made or any statements omitted to be made) by Organovo, or (ii) any actions taken or omitted to be taken by any Indemnified Person in connection with Organovo's engagement of the Warrant Agent, or (B) otherwise relate to or arise out of Warrant Agent's activities on Organovo's behalf under Warrant Agent's engagement hereunder, and Organovo shall reimburse any Indemnified Person for all expenses (including the reasonable fees and expenses of counsel) incurred by such Indemnified Person in connection with investigating, preparing or defending any such claim, action, suit or proceeding, whether or not in connection with pending or threatened litigation in which any Indemnified Person is a party. Organovo will not, however, be responsible for any Claim, which is finally judicially determined to have resulted from the gross negligence or willful misconduct of any person seeking indemnification for such Claim. Organovo further agrees that no Indemnified Person shall have any liability to Organovo for or in connection with Organovo's engagement of Warrant Agent hereunder except for any Claim incurred by Organovo as a result of such Indemnified Person's gross negligence or willful misconduct (and in no event shall any such liability exceed, in the aggregate for all Indemnified Persons, the amount of the Fee actually received by the Warrant Agent).

Organovo further agrees that it will not, without the prior written consent of Warrant Agent, settle, compromise or consent to the entry of any judgment in any pending or threatened Claim in respect of which indemnification may be sought hereunder (whether or not any Indemnified Person is an actual or potential party to such Claim), unless such settlement, compromise or consent includes an unconditional, irrevocable release of each Indemnified Person from any and all liability arising out of such Claim.

Promptly upon receipt by an Indemnified Person of notice of any complaint or the assertion or institution of any Claim with respect to which indemnification is being sought hereunder, such Indemnified Person shall notify Organovo in writing of such complaint or of such assertion or institution but failure to so notify Organovo shall not relieve Organovo from any obligation it may have hereunder, except and only to the extent such failure results in the forfeiture by Organovo of substantial rights and defenses. If Organovo so elects or is requested by such Indemnified Person, Organovo will assume the defense of such Claim, including the employment of counsel reasonably satisfactory to such Indemnified Person and the payment of the fees and expenses of such counsel. In the event, however, that legal counsel to such Indemnified Person reasonably determines that having common counsel would present such counsel with a conflict of interest or if the defendant in, or target of, any such Claim, includes an Indemnified Person and Organovo, and legal counsel to such Indemnified Person reasonably concludes that there may be legal defenses available to it or other Indemnified Persons different from or in addition to those available to Organovo, then such Indemnified Person may employ its own separate counsel to represent or defend him, her or it in any such Claim and Organovo shall pay the reasonable fees and expenses of such counsel. Notwithstanding anything herein to the contrary, if Organovo fails timely or diligently to defend, contest, or otherwise protect against any Claim, the relevant Indemnified Party shall have the right, but not the obligation, to defend, contest, compromise, settle, assert crossclaims, or counterclaims or otherwise protect against the same, and shall be fully indemnified by Organovo therefor, including without limitation, for the reasonable fees and expenses of its counsel and all amounts paid as a result of such Claim or the compromise or settlement thereof. In addition, with respect to any Claim in which Organovo assumes the defense, the Indemnified Person shall have the right to participate in such Claim and to retain his, her or its own counsel therefor at his, her or its own expense.

Organovo agrees that if any indemnity sought by an Indemnified Person hereunder is held by a court to be unavailable for any reason then (whether or not Warrant Agent is the Indemnified Person), Organovo and Warrant Agent shall contribute to the Claim for which such indemnity is held unavailable in such proportion as is appropriate to reflect the relative benefits to Organovo, on the one hand, and Warrant Agent on the other, in connection with Warrant Agent's engagement referred to above, subject to the limitation that in no event shall the amount of Warrant Agent's contribution to such Claim exceed the amount of fees actually received by Warrant Agent from Organovo pursuant to Warrant Agent's engagement.

Organovo's indemnity, reimbursement and contribution obligations under this Agreement (a) shall be in addition to, and shall in no way limit or otherwise adversely affect any rights that any Indemnified Party may have at law or at equity and (b) shall be effective whether or not Organovo is at fault in any way.

9. Notices. Any notice or other communication required or permitted to be given pursuant to this Agreement shall be deemed sufficiently given if sent by first-class mail, postage prepaid, addressed as follows, or by facsimile: if to Organovo, at 6275 Nancy Ridge Drive, San Diego, CA 92121, Attention: Keith Murphy, President, fax 858-550-9948, with copies to Jeff Thacker, DLA Piper LLP (US), fax 858-638-5128; if to the Warrant Agent, at 810 7th Avenue, 18th Floor, New York, NY 10019, Attention: Adam Stern, fax 212-813-1047, with copies to Kenneth S. Goodwin, Meister Seelig & Fein LLP, 2 Grand Central Tower, 140 East 45th Street, 19th Floor, New York, NY 10017, fax 646-539-3663.

10. Supplements and Amendments. Any term or provision of this Agreement may be waived at any time by the party which is entitled to the benefits thereof, but only in a writing signed by such party, and this Agreement may be amended or supplemented at any time, but only by written agreement of Organovo and the Warrant Agent. Any such waiver with respect to a failure to observe any such provision shall not operate as a waiver of any subsequent failure to observe such provision unless otherwise expressly provided in such waiver.

11. Assignments. This Agreement may not be assigned by any party without the express written approval of all other parties.

12. Governing Law. This Agreement shall be governed by and construed in accordance with the internal laws (and not the laws pertaining to conflicts of laws) of the State of New York. This Agreement shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be fully performed therein. Any disputes which arise under this Agreement, even after the termination of this Agreement, will be heard only in the state or federal courts located in the County of New York, State of New York. The parties hereto expressly agree to submit themselves to the jurisdiction of the foregoing courts in the County of New York, State of New York. The parties hereto expressly waive any rights they may have to contest the jurisdiction, venue or authority of any court sitting in the County and State of New York. In the event of the bringing of any action, or suit by a party hereto against the other party hereto, arising out of or relating to this Agreement, the party in whose favor the final judgment or award shall be entered shall be entitled to have and recover from the other party the costs and expenses incurred in connection therewith, including its reasonable attorneys' fees. Any rights to trial by jury with respect to any such action, proceeding or suit are hereby waived by Warrant Agent and Organovo.

13. Benefits of this Agreement. Nothing in this Agreement shall be construed to give any person or corporation other than Organovo and the Warrant Agent any legal or equitable right, remedy or claim under this Agreement; and this Agreement shall be for the sole and exclusive benefit of Organovo and the Warrant Agent.

14. Descriptive Headings. The descriptive headings of the sections of this Agreement are inserted for convenience only and shall not control or affect the meanings or construction of any of the provisions hereof.

15. Enforceability. If any of the provisions of this Agreement are held to be void or unenforceable, all of the other provisions shall nonetheless continue in full force and effect.

16. **Waiver.** The waiver by any of the parties hereto of a breach or alleged breach of the terms of this Agreement by the other party shall not constitute a waiver of any other breach or alleged breach.

17. **Entire Agreement.** This Agreement supersedes all previous arrangements and agreements whether written or oral, and comprises the entire agreement, between Organovo and the Warrant Agent in respect of the subject matter hereof.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

ORGANOVO HOLDINGS, INC.

/S/ KEITH MURPHY

Keith Murphy

President and Chief Executive Officer

AGREED and ACCEPTED:

We agree and accept all the terms and conditions stated in the above Agreement.

Dated: November 16, 2012

AEGIS CAPITAL CORP.

“Warrant Agent”

/S/ ADAM K. STERN

Adam K. Stern

Head of Private Equity Banking