

ORGANOVO HOLDINGS, INC.

Form 10-Q

November 03, 2016

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

Form 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2016

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 001-35996

Organovo Holdings, Inc.

(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction of

incorporation or organization)

6275 Nancy Ridge Drive, Suite 110,

San Diego, CA 92121

27-1488943  
(I.R.S. Employer

Identification No.)

(858) 224-1000

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(Address of principal executive offices and zip code) (Registrant's telephone number, including area code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company) Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of November 1, 2016, a total of 103,865,862 shares of the registrant's Common Stock, \$0.001 par value, were outstanding.

ORGANOVO HOLDINGS, INC.

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## PART I—FINANCIAL INFORMATION

## ITEM 1. FINANCIAL STATEMENTS

Organovo Holdings, Inc.

Condensed Consolidated Balance Sheets

(in thousands except for share data)

	September 30, 2016 (Unaudited)	March 31, 2016 (Audited)
<b>Assets</b>		
<b>Current Assets</b>		
Cash and cash equivalents	\$ 51,723	\$ 62,091
Accounts receivable	606	259
Inventory, net	445	334
Prepaid expenses and other current assets	908	968
Total current assets	53,682	63,652
Fixed assets, net	3,647	3,711
Restricted cash	79	79
Other assets, net	128	134
Total assets	\$ 57,536	\$ 67,576
<b>Liabilities and Stockholders' Equity</b>		
<b>Current Liabilities</b>		
Accounts payable	\$ 754	\$ 787
Accrued expenses	2,831	2,450
Deferred rent	147	139
Deferred revenue	479	1,110
Warrant liabilities	9	4
Total current liabilities	4,220	4,490
Deferred rent, net of current portion	829	905
Total liabilities	\$ 5,049	\$ 5,395
<b>Commitments and Contingencies (Note 4)</b>		
<b>Stockholders' Equity</b>		
Common stock, \$0.001 par value; 150,000,000 shares authorized, 93,750,862 and 92,391,989 shares issued and outstanding at		
September 30, 2016 and March 31, 2016, respectively	94	92
Additional paid-in capital	231,479	222,959
Accumulated deficit	(179,079 )	(160,870)
Unrealized gain (loss) on foreign currency revaluation	(7 )	—
Total stockholders' equity	52,487	62,181

Total Liabilities and Stockholders' Equity	\$ 57,536	\$ 67,576
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The accompanying notes are an integral part of these condensed consolidated financial statements.

Organovo Holdings, Inc.

## Unaudited Condensed Consolidated Statements of Operations and Other Comprehensive Loss

(in thousands except share and per share data)

	Three Months Ended September 30, 2016	Three Months Ended September 30, 2015	Six Months Ended September 30, 2016	Six Months Ended September 30, 2015
<b>Revenues</b>				
Products and services	\$ 1,023	\$ 187	\$ 1,697	\$ 396
Collaborations	345	19	557	33
Grants	8	95	12	178
<b>Total Revenues</b>	<b>1,376</b>	<b>301</b>	<b>2,266</b>	<b>607</b>
<b>Cost of revenues</b>				
Research and development expenses	4,544	4,739	8,987	8,881
Selling, general, and administrative expenses	5,918	6,846	10,974	11,468
<b>Total costs and expenses</b>	<b>10,855</b>	<b>11,585</b>	<b>20,522</b>	<b>20,349</b>
<b>Loss from Operations</b>	<b>(9,479 )</b>	<b>(11,284 )</b>	<b>(18,256 )</b>	<b>(19,742 )</b>
<b>Other Income (Expense)</b>				
Change in fair value of warrant liabilities	—	9	(5 )	(28 )
Interest income	37	18	74	25
<b>Total Other Income (Expense)</b>	<b>37</b>	<b>27</b>	<b>69</b>	<b>(3 )</b>
Income Tax Expense	—	—	(22 )	(3 )
<b>Net Loss</b>	<b>\$(9,442 )</b>	<b>\$(11,257 )</b>	<b>\$(18,209 )</b>	<b>\$(19,748 )</b>
Currency Translation Adjustment	\$(7 )	\$—	\$(7 )	\$—
<b>Comprehensive Loss</b>	<b>\$(9,449 )</b>	<b>\$(11,257 )</b>	<b>\$(18,216 )</b>	<b>\$(19,748 )</b>
<b>Net loss per common share—basic and diluted</b>	<b>\$(0.10 )</b>	<b>\$(0.12 )</b>	<b>\$(0.20 )</b>	<b>\$(0.23 )</b>
<b>Weighted average shares used in computing net loss per common</b>				
share—basic and diluted	93,185,400	92,385,150	92,790,850	87,715,217

The accompanying notes are an integral part of these condensed consolidated financial statements.

Organovo Holdings, Inc.

Unaudited Condensed Consolidated Statements of Cash Flows

(in thousands)

	Six Months Ended September 30, 2016	Six Months Ended September 30, 2015
<b>Cash Flows From Operating Activities</b>		
Net loss	\$(18,209 )	\$(19,748 )
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	502	324
Change in fair value of warrant liabilities	5	28
Stock-based compensation	3,522	3,952
Amortization of warrants issued for services	—	(105 )
Increase (decrease) in cash resulting from changes in:		
Accounts receivable	(347 )	(180 )
Inventory	(111 )	(2 )
Prepaid expenses and other assets	80	337
Accounts payable	(33 )	(820 )
Accrued expenses	381	164
Deferred rent	(68 )	(21 )
Deferred revenue	(631 )	1,150
Net cash used in operating activities	(14,909 )	(14,921 )
<b>Cash Flows From Investing Activities</b>		
Purchases of fixed assets	(452 )	(1,550 )
Proceeds from disposals of fixed assets	—	14
Purchases of intangible assets	—	(35 )
Net cash used in investing activities	(452 )	(1,571 )
<b>Cash Flows From Financing Activities</b>		
Proceeds from issuance of common stock and exercise of warrants, net	4,500	43,137
Proceeds from exercise of stock options	500	81
Principal payments on capital lease obligations	—	(5 )
Net cash provided by financing activities	5,000	43,213
Effect of currency exchange rate changes on cash and cash equivalents	(7 )	—
Net Increase (Decrease) in Cash and Cash Equivalents	(10,368 )	26,721
Cash and Cash Equivalents at Beginning of Period	62,091	50,142
Cash and Cash Equivalents at End of Period	\$ 51,723	\$ 76,863
<b>Supplemental Disclosure of Cash Flow Information:</b>		
Interest paid	\$ —	\$ —
Income taxes paid	\$ 22	\$ 3

The accompanying notes are an integral part of these condensed consolidated financial statements.





Supplemental Disclosure of Noncash Investing and Financing Activities (\$ in thousands):

During the six months ended September 30, 2015, the warrant liability was reduced by approximately \$138 as a result of warrant exercises.

During the six months ended September 30, 2015, approximately \$374 of leasehold improvements were funded by the Company's landlord as a lease incentive. The Company capitalized these costs as property, plant and equipment, with a corresponding increase in deferred rent that will be amortized over the remaining lease term.

The accompanying notes are an integral part of these condensed consolidated financial statements.

Organovo Holdings, Inc.

Notes to Unaudited Condensed Consolidated Financial Statements

## Note 1. Description of Business and Summary of Significant Accounting Policies

### Nature of operations and basis of presentation

References in these notes to the unaudited condensed consolidated financial statements to “Organovo Holdings, Inc.,” “Organovo Holdings,” “we,” “us,” “our,” “the Company” and “our Company” refer to Organovo Holdings, Inc. and its consolidated subsidiaries. Our consolidated financial statements include the accounts of the Company as well as its wholly-owned subsidiaries, with all material intercompany accounts and transactions eliminated in consolidation. In December 2014, we established a wholly-owned subsidiary, Samsara Sciences, Inc., to focus on the acquisition of qualified cells in support of our commercial and research endeavors. In September 2015, we established another wholly-owned subsidiary in the United Kingdom, Organovo U.K., Ltd., for the primary purpose of establishing a sales presence in Europe.

Since its inception, the Company has devoted its efforts primarily to developing and commercializing a platform technology and functional 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. The Company has also focused efforts on raising capital and building infrastructure. In November 2014, the Company announced the commercial release of its first product, the ExVive™ Human Liver Tissue for use in toxicology and other preclinical drug testing. In September 2016, the Company announced that it had begun commercial contracting for services relating to its second product, the ExVive Human Kidney tissue.

The Company’s activities are subject to significant risks and uncertainties including failing to successfully develop products and services based on its technology and to achieve the market acceptance necessary to generate sufficient revenues to support its operations and to achieve and sustain profitability.

The accompanying interim condensed consolidated financial statements have been prepared by the Company, without audit, in accordance with the instructions to Form 10-Q and, therefore, do not necessarily include all information and footnotes necessary for a fair statement of its financial position, results of operations, stockholders’ equity and cash flows in accordance with generally accepted accounting principles (“GAAP”). The balance sheet at March 31, 2016 is derived from the Company’s audited balance sheet at that date.

In the opinion of management, the unaudited financial information for the interim periods presented reflects all adjustments, which are only normal and recurring, necessary for a fair statement of the Company’s financial position, results of operations, stockholders’ equity and cash flows. These financial statements should be read in conjunction with the financial statements included in the Company’s Annual Report on Form 10-K for the year ended March 31, 2016, filed with the Securities and Exchange Commission (the “SEC”) on June 9, 2016. Operating results for interim periods are not necessarily indicative of operating results for the Company’s fiscal year ending March 31, 2017.

### Liquidity

As of September 30, 2016, the Company had an accumulated deficit of approximately \$179.1 million. The Company also had negative cash flows from operations of approximately \$14.9 million during the six months ended September 30, 2016.

Through September 30, 2016, the Company has financed its operations primarily through the sale of convertible notes, the private placement of equity securities, the sale of common stock through public offerings, and through revenue derived from product and research service-based agreements, collaborative research agreements, and grants. In addition, on October 25, 2016, the Company closed the issuance and sale of 10,065,000 shares of its common stock in an underwritten public offering. The Company received net proceeds of approximately \$25.6 million in the offering, after deducting underwriting discounts and commissions and the Company's estimated expenses. Based on its current operating plan and available cash resources, the Company has sufficient resources to fund its business for at least the next twelve months.

The Company's future capital needs will depend on the revenues it generates through its commercialization efforts and the resources it elects to spend to pursue its product development efforts and implement its business plan. As a result, the Company cannot predict with certainty when it may be required or otherwise elect to secure additional capital to fund its future operations and business plans.

The Company intends to cover its future operating expenses through cash on hand, through revenue derived from research service agreements, product sales, collaborative research agreements, grants, and through the issuance of additional equity or debt securities.

Depending on market conditions, we cannot be sure that additional financing will be available when needed or that, if available, financing will be obtained on terms favorable to us or to our stockholders.

Having insufficient funds may require us to delay, scale back, or eliminate some or all of our development programs or relinquish rights to our technology on less favorable terms than we would otherwise choose. Failure to obtain adequate financing could eventually adversely affect our ability to operate as a going concern. If we raise additional funds from the issuance of equity securities, substantial dilution to our existing stockholders would likely result. If we raise additional funds by incurring debt financing, the terms of the debt may involve significant cash payment obligations as well as covenants and specific financial ratios that may restrict our ability to operate our business.

#### Use of estimates

The preparation of the financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates. Significant estimates used in preparing the condensed consolidated financial statements include those assumed in computing the valuation of warrants, revenue recognized under the proportional performance model, the valuation of stock-based compensation expense, and the valuation allowance on deferred tax assets.

#### Fair value measurement

The Company has issued warrants, of which some are classified as derivative liabilities as a result of the terms in the warrants that provide for down-round protection in the event of a dilutive issuance. The Company uses Level 3 inputs (unobservable inputs that are supported by little or no market activity, and that are significant to the fair value of the assets or liabilities) for its valuation methodology for the warrant derivative liabilities. The estimated fair values were determined using a Monte Carlo option pricing model based on various assumptions (see Note 2). The Company's derivative liabilities are adjusted to reflect estimated fair value at each period end, with any change in the estimated fair value being recorded in other income or expense accordingly, as adjustments to the fair value of derivative liabilities. Various factors are considered in the pricing models the Company uses to value the warrants, including the Company's current stock price, the remaining life of the warrants, the volatility of the Company's stock price, and the risk-free interest rate. Future changes in these factors may have an impact on the computed fair value of the warrant liability.

The estimated fair values of the liabilities measured on a recurring basis are as follows:

Fair Value Measurements at September 30 and March 31, 2016 (in thousands):			
Balance at	Quoted	Significant	Significant
September 30, 2016	Prices in Active Markets	Other Observable Inputs (Level 2)	Other Unobservable Inputs (Level 3)

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		(Level 1)		
Warrant liability	\$ 9	—	—	\$ 9
		Quoted		
		Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)
	Balance at March 31, 2016			
Warrant liability	\$ 4	—	—	\$ 4

The following table presents the activity for liabilities measured at estimated fair value using unobservable inputs for the six months ended September 30, 2016:

Fair Value Measurements Using Significant Unobservable Inputs (Level 3)

	Warrant
	Derivative
	Liability
	(in thousands)
Balance at March 31, 2016	\$ 4
Issuances	—
Adjustments to estimated fair value	5
Warrant liability removal due to settlements	—
Warrant liability reclassified to equity	—
Balance at September 30, 2016	\$ 9

Revenue recognition

The Company's revenues are derived from research service agreements, product sales, collaborative research agreements, and grants from the National Institutes of Health ("NIH"), U.S. Treasury Department and private not-for-profit organizations.

The Company recognizes revenue when the following criteria have been met: (i) persuasive evidence of an arrangement exists; (ii) services have been rendered or product has been delivered; (iii) price to the customer is fixed and determinable; and (iv) collection of the underlying receivable is reasonably assured.

Billings to customers or payments received from customers are included in deferred revenue on the balance sheet until all revenue recognition criteria are met. As of September 30, 2016 and March 31, 2016, the Company had approximately \$479,000 and \$1,110,000, respectively, in deferred revenue related to its grants, collaborative research programs and research service agreements.

Revenue arrangements with multiple deliverables

The Company follows ASC 605-25 Revenue Recognition – Multiple-Element Arrangements for revenue arrangements that contain multiple deliverables. Judgment is required to properly identify the accounting units of the multiple deliverable transactions and to determine the manner in which revenue should be allocated among the accounting units. Moreover, judgment is used in interpreting the commercial terms and determining when all criteria of revenue recognition have been met for each deliverable in order for revenue recognition to occur in the appropriate accounting period. For multiple deliverable agreements, consideration is allocated at the inception of the agreement to all deliverables based on their relative selling price. The relative selling price for each deliverable is determined using vendor-specific objective evidence ("VSOE") of selling price or third-party evidence of selling price if VSOE does not exist. If neither VSOE nor third-party evidence of selling price exists, the Company uses its best estimate of the

selling price for the deliverable.

While changes in the allocation of the arrangement consideration between the units of accounting will not affect the amount of total revenue recognized for a particular sales arrangement, any material changes in these allocations could impact the timing of revenue recognition, which could affect the Company's results of operations.

The Company periodically receives license fees for non-exclusive research licensing associated with funded research projects. License fees under these arrangements are recognized over the term of the contract or development period as it has been determined that such licenses do not have stand-alone value.

#### Revenue from research service agreements

For research service agreements that contain only a single or primary deliverable, the Company defers any up-front fees collected from customers, and recognizes revenue for the delivered element only when it determines there are no uncertainties regarding customer acceptance. For agreements that contain multiple deliverables, the Company follows ASC 605-25 as described above.

#### Research and development revenue under collaborative agreements

The Company's collaboration revenue consists of license and collaboration agreements that contain multiple elements, which may include non-refundable up-front fees, payments for reimbursement of third-party research costs, payments for ongoing research, payments associated with achieving specific development milestones and royalties based on specified percentages of net product sales, if any. The Company considers a variety of factors in determining the appropriate method of revenue recognition under these arrangements, such as whether the elements are separable, whether there are determinable fair values and whether there is a unique earnings process associated with each element of a contract.

The Company recognizes revenue from research funding under collaboration agreements when earned on a "proportional performance" basis as research services are provided or substantive milestones are achieved. We recognize revenue that is contingent upon the achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. A milestone is considered substantive when the consideration payable to us for the milestone (i) is consistent with our performance necessary to achieve the milestone or the increase in value to the collaboration resulting from our performance, (ii) relates solely to our past performance and (iii) is reasonable relative to all of the other deliverables and payments within the arrangement. In making this assessment, we consider all facts and circumstances relevant to the arrangement, including factors such as the risks that must be overcome to achieve the milestone, the level of effort and investment required to achieve the milestone and whether any portion of the milestone consideration is related to future performance or deliverables.

The Company initially defers revenue for any amounts billed or payments received in advance of the services being performed, and recognizes revenue pursuant to the related pattern of performance, using the appropriate method of revenue recognition based on its analysis of the related contractual element(s).

In November 2014, the Company entered into a collaborative nonexclusive research affiliation with a university medical school and a non-profit medical charity, under which the Company received a one-time grant from the charity towards the placement of a NovoGen Bioprinter at the university for the purpose of developing bioprinted tissues for surgical transplantation research. The Company has recorded \$12,500 for each of the three months ended September 30, 2016 and 2015 and \$25,000 for each of the six months ended September 30, 2016 and 2015, respectively, in revenue related to this collaboration in recognition of the proportional performance achieved.

In April 2015, the Company entered into a research collaboration agreement with a third party to develop custom tissue models for fixed fees. Based on the proportional performance achieved under this agreement, no collaboration revenue was recorded for the three and six months ended September 30, 2016 or 2015. Approximately \$352,000 in collaboration revenue has been recognized to date under this agreement as of September 30, 2016.

Also in April 2015, the Company entered into a multi-year research agreement with a third party to develop multiple custom tissue models for use in drug development. Approximately \$332,000 and \$533,000 were recorded as revenue in recognition of the proportional performance achieved under this agreement during the three and six months ended September 30, 2016, respectively. Approximately \$5,000 was recorded as revenue in recognition of the proportional performance achieved under this agreement during the three and six months ended September 30, 2015.

In June 2016, the Company announced it had entered into another collaborative nonexclusive research affiliation with a university medical school and a non-profit medical charity, under which the Company received a one-time grant from the charity towards the placement of a NovoGen Bioprinter at the university for the purpose of developing bioprinted tissues for skeletal disease research. The Company received an up-front payment in June 2016, which has initially been recorded as deferred revenue. No revenue has been recorded under this agreement as of September 30, 2016.



Product revenue

The Company recognizes product revenue at the time of shipment to the customer, provided all other revenue recognition criteria have been met. To date, the Company has not recognized significant revenue from commercial product sales.

As our commercial sales increase, we expect to establish a reserve for estimated product returns that will be recorded as a reduction to revenue. This reserve will be maintained to account for future return of products sold in the current period. The reserve will be reviewed quarterly and will be estimated based on an analysis of our historical experience related to product returns.

#### Grant revenues

During August 2013, the Company was awarded a research grant by a private, not-for-profit organization for up to \$251,700, contingent on go/no-go decisions made by the grantor at the completion of each stage of research as outlined in the grant award. Revenues from the grant are based upon internal costs incurred that are specifically covered by the grant, plus an additional rate that provides funding for overhead expenses. Revenue is recognized when the Company incurs expenses that are related to the grant. Revenue recognized under this grant was approximately \$8,000 and \$12,000 for the three and six months ended September 30, 2016, respectively. Revenue recognized under this grant was approximately \$21,000 and \$30,000 for the three and six months ended September 30, 2015, respectively.

During September 2014, the NIH awarded the Company a research grant totaling approximately \$222,000. The grant provides for fixed payments based on the achievement of certain milestones. As such, revenue is recognized upon completion of substantive milestones. Revenue recognized under this grant was approximately \$74,000 and \$148,000 for the three and six months ended September 30, 2015, respectively. The full amount of this grant has been recognized as revenue as of September 30, 2015.

#### Cost of revenues

We reported \$0.4 million and \$0.6 million in cost of revenues for the three and six months ended September 30, 2016, respectively. This is our second period reporting this expense line item, which captures all of our costs related to manufacturing and delivering our product and service revenue. Cost of revenues for the three and six months ended September 30, 2015 was minimal and was included in research and development expense.

#### Net loss per share

Basic and diluted net loss per share has been computed using the weighted-average number of shares of common stock outstanding during the period. The weighted-average number of shares used to compute diluted loss per share excludes any assumed exercise of stock options and warrants, shares reserved for purchase under the Company's 2016 Employee Stock Purchase Plan ("ESPP"), the assumed release of restriction of restricted stock units, and shares subject to repurchase as the effect would be anti-dilutive. No dilutive effect was calculated for the three and six months ended September 30, 2016 or 2015, as the Company reported a net loss for each respective period and the effect would have been anti-dilutive. Common stock equivalents excluded from computing diluted net loss per share were approximately 13.2 million for the three and six months ended September 30, 2016, and 10.5 million for the three and six months ended September 30, 2015.

#### Note 2. Derivative Liability

During 2011 and 2012, the Company issued five-year warrants to purchase its common stock. For certain of these warrants, the exercise price is protected against down-round financing throughout the term of the warrant. Pursuant to ASC 815-15 and ASC 815-40, the fair value of the warrants was recorded as a derivative liability on the issuance dates.

The Company revalues the warrants classified as derivative liabilities as of the end of each reporting period. The estimated fair value of the outstanding warrant liabilities was approximately \$9,000 and \$4,000 as of September 30,

2016 and March 31, 2016, respectively. The changes in fair value of the derivative liabilities were decreases of approximately \$0 and \$9,000 for the three months ended September 30, 2016 and 2015, respectively, and increases of approximately \$5,000 and \$28,000 for the six months ended September 30, 2016 and 2015, respectively, and are included in other income (expense) in the statements of operations.

During the three months ended September 30, 2016 and 2015, no warrants that were classified as derivative liabilities were exercised. During the six months ended September 30, 2016 and 2015, 0 and 38,234 warrants, respectively, that were classified as derivative liabilities were exercised. The warrants were revalued as of the applicable settlement dates, and the change in fair value was recognized to earnings.

The derivative liabilities were valued at the end of each reporting period using a Monte Carlo valuation model with the following assumptions:

	September 30, 2016	March 31, 2016
Closing price per share of common stock	\$ 3.79	\$2.17
Exercise price per share	\$ 1.00	\$1.00
Expected volatility	72.82 %	73.35 %
Risk-free interest rate	0.45 %	0.59 %
Dividend yield	—	—
Remaining expected term of underlying securities (years)	0.46	0.96

### Note 3. Stockholders' Equity

#### Common stock

In May 2008, the Board of Directors of the Company approved the 2008 Equity Incentive Plan (the "2008 Plan"). The 2008 Plan authorized the issuance of up to 1,521,584 common shares for awards of incentive stock options, non-statutory stock options, restricted stock awards, restricted stock award units, and stock appreciation rights. The 2008 Plan terminates on July 1, 2018. No shares have been issued under the 2008 Plan since 2011, and the Company does not intend to issue any additional shares from the 2008 Plan in the future.

In January 2012, the Board of Directors of the Company approved the 2012 Equity Incentive Plan (the "2012 Plan"). The 2012 Plan authorized the issuance of up to 6,553,986 shares of common stock for awards of incentive stock options, non-statutory stock options, stock appreciation rights, restricted stock, restricted stock units, performance units, performance shares, and other stock or cash awards. The Board of Directors and stockholders of the Company approved an amendment to the 2012 Plan in August 2013 to increase the number of shares of common stock that may be issued under the 2012 Plan by 5,000,000 shares. In addition, the Board of Directors and stockholders of the Company approved an amendment to the 2012 Plan in August 2015 to further increase the number of shares of common stock that may be issued under the 2012 Plan by 6,000,000 shares, bringing the aggregate shares issuable under the 2012 Plan to 17,553,986. The 2012 Plan as amended and restated became effective on August 20, 2015 and terminates ten years after such date. As of September 30, 2016, 3,578,760 shares remain available for issuance under the 2012 plan.

The Company filed a shelf registration statement on Form S-3 (File No. 333-189995), or the 2013 Shelf, with the SEC on July 17, 2013 authorizing the offer and sale in one or more offerings of up to \$100,000,000 in aggregate of common stock, preferred stock, debt securities, or warrants to purchase common stock, preferred stock or debt securities, or any combination of the foregoing, either individually or as units comprised of one or more of the other securities. The 2013 Shelf was declared effective by the SEC on July 26, 2013. On July 20, 2016, the Company filed a post-effective amendment to the 2013 Shelf to deregister the \$26,777,784 of common stock remaining unsold as of such date under the 2013 Shelf. As a result of the post-effective amendment, no further shares of common stock may be issued pursuant to the 2013 Shelf.

The Company filed a second shelf registration statement on Form S-3 (File No. 333-202382), or the 2015 Shelf, with the SEC on February 27, 2015 authorizing the offer and sale in one or more offerings of up to \$190,000,000 in aggregate of common stock, preferred stock, debt securities, warrants to purchase common stock, preferred stock or debt securities, or any combination of the foregoing, either individually or as units comprising one or more of the other securities. The 2015 Shelf was declared effective by the SEC on March 17, 2015.

On October 25, 2016, the Company closed the issuance and sale of 10,065,000 shares (the “2016 Offering”) of its common stock. The 2016 Offering was effected pursuant to an Underwriting Agreement (the “2016 Underwriting Agreement”), dated October 20, 2016, with Jefferies LLC (the “Representative”), acting as representative of the underwriters named in the 2016 Underwriting Agreement. The price to the public in the 2016 Offering was \$2.75 per share, and the underwriters purchased the shares from the Company pursuant to the 2016 Underwriting Agreement at a price of \$2.585 per share. The net proceeds to the Company from the 2016 Offering were approximately \$25.6 million after deducting underwriting discounts and commissions and estimated expenses payable by the Company. The 2016 Offering was made pursuant to the Company’s 2015 Shelf.

On June 18, 2015, the Company entered into an Underwriting Agreement with Jefferies LLC and Piper Jaffray & Co., acting as representatives of the underwriters named in the 2015 Underwriting Agreement and as joint book-running managers, relating to the issuance and sale of 9,425,000 shares of the Company’s common stock, par value \$0.001 per share (the “2015 Offering”). The price to the public in the 2015 Offering was \$4.25 per share, and the Underwriters agreed to purchase the shares from the Company pursuant to the 2015 Underwriting Agreement at a price of \$3.995 per share. Under the terms of the 2015 Underwriting Agreement, the

Company granted the Underwriters an option, exercisable for 30 days, to purchase up to an additional 1,413,750 shares. The Company issued 10,838,750 shares of common stock pursuant to the 2015 Underwriting Agreement, including shares issuable upon the exercise of the over-allotment option, with net proceeds of approximately \$43.1 million, after deducting underwriting discounts and commissions and expenses payable by the Company. The shares were issued pursuant to the 2015 Shelf.

In December 2014, the Company entered into an equity offering sales agreement, or the 2014 Sales Agreement, with Cantor Fitzgerald. Under the terms of the 2014 Sales Agreement, the Company may offer and sell shares of its common stock, from time to time, through the investment bank in at-the-market offerings. During the three and six months ended September 30, 2015, the Company issued no shares of common stock in at-the-market offerings under the 2014 Sales Agreement. During the three and six months ended September 30, 2016, the Company issued 997,181 shares of common stock in at-the-market offerings under the 2014 Sales Agreement with net proceeds of approximately \$4.5 million, after deducting underwriting discounts and commissions and expenses payable by the Company. As of September 30, 2016, the Company has sold an aggregate of 1,997,181 shares of common stock in at-the-market offerings under the 2014 Sales Agreement, with net proceeds of approximately \$10.8 million. On July 20, 2016, the Company filed a prospectus supplement to move the remaining shares of common stock that previously could have been sold pursuant to the 2014 Sales Agreement under the 2013 Shelf to the 2015 Shelf, which does not expire until March 17, 2018. Based on sales through September 30, 2016, the Company can sell an additional \$21.9 million of shares pursuant to the 2014 Sales Agreement under the 2015 Shelf.

During the three months ended September 30, 2016 and 2015, the Company issued 123,104 and 0 shares of common stock upon the exercise of 160,000 and 0 warrants, respectively. During the six months ended September 30, 2016 and 2015, the Company issued 123,104 and 30,186 shares of common stock upon the exercise of 160,000 and 38,234 warrants, respectively.

Finally, during the three months ended September 30, 2016 and 2015, the Company issued 206,266 and 2,060 shares of common stock upon the exercise of 206,266 and 2,060 stock options, respectively. During the six months ended September 30, 2016 and 2015, the Company issued 206,266 and 27,563 shares of common stock upon exercise of 206,266 and 27,563 stock options, respectively.

#### Restricted stock awards

During the three months ended September 30, 2016 and 2015, there were 0 and 100,692 shares of restricted stock, respectively, cancelled related to shares of common stock returned to the Company, at the option of the holders, to cover the tax liability related to the vesting of 0 and 187,500 restricted stock awards, respectively. During the six months ended September 30, 2016 and 2015, there were 2,259 and 102,951 shares of restricted stock, respectively, cancelled related to shares of common stock returned to the Company, at the option of the holders, to cover the tax liability related to the vesting of 6,250 and 193,750 restricted stock awards, respectively. Upon the return of the common stock, an equal number of stock options with immediate vesting were granted to the individuals at the vesting date market value strike price. A summary of the Company's restricted stock award activity from March 31, 2016 through September 30, 2016 is as follows:

	Number of Shares
Unvested at March 31, 2016	6,250

Granted	—
Vested	(6,250 )
Canceled / forfeited	—
Unvested at September 30, 2016	—

The fair value of each restricted stock award is recognized as stock-based compensation expense over the vesting term of the award. The Company recorded restricted stock-based compensation expense in general and administrative expenses for employees and non-employees of approximately \$0 and \$71,000 for the three months ended September 30, 2016 and 2015, respectively, and approximately \$3,000 and \$174,000 for the six months ended September 30, 2016 and 2015, respectively. The Company recorded restricted stock-based compensation expense in research and development expenses for employees of approximately \$0 and \$3,000 for the three months ended September 30, 2016 and 2015, respectively, and approximately \$0 and \$3,000 for the six months ended September 30, 2016 and 2015, respectively.

As of September 30, 2016, there was no unrecognized stock-based compensation expense for restricted stock awards.

## Restricted stock units

During the three and six months ended September 30, 2016, the Company issued restricted stock units for an aggregate of 645,900 and 1,165,750 shares of common stock, respectively, to its employees and directors. These shares of common will be issued upon vesting of the restricted stock units. Vesting generally occurs (i) on the one-year anniversary of the grant date, (ii) quarterly over a three-year period, (iii) quarterly over a four-year period, (iv) over a four-year period, with 25% vesting on the one-year anniversary of the vesting commencement date and the remainder vesting ratably on a quarterly basis over the next twelve quarters, or (v) over a three-year period with 50% vesting on the two-year anniversary of the vesting commencement date and 50% vesting on the three-year anniversary of the vesting commencement date. A summary of the Company's restricted stock unit activity from March 31, 2016 through September 30, 2016 is as follows:

	Number of Shares	Weighted Average Price
Unvested at March 31, 2016	—	\$ —
Granted	1,165,750	\$ 3.66
Vested	(34,581 )	\$ 3.85
Canceled / forfeited	(1,700 )	\$ 3.21
Unvested at September 30, 2016	1,129,469	\$ 3.66

The fair value of each restricted stock unit is recognized as stock-based compensation expense over the vesting term of the award. The fair value is based on the closing stock price on the date of the grant. The Company recorded restricted stock-based compensation expense in operating expenses for employees of approximately \$349,000 and \$370,000 for the three and six months ended September 30, 2016, respectively. Stock-based compensation expense included in research and development was \$114,000 and \$132,000 for the three and six months ended September 30, 2016, respectively. Stock-based compensation expense included in general and administrative expense was \$235,000 and \$238,000 for the three and six months ended September 30, 2016, respectively.

As of September 30, 2016, total unrecognized stock-based compensation expense related to restricted stock units was approximately \$3,896,000, which will be recognized over a weighted average period of 3.25 years.

## Stock options

Under the 2012 Plan, 1,386,500 and 692,092 stock options were issued during the three months ended September 30, 2016 and 2015, respectively, and 1,803,140 and 2,454,733 stock options were issued during the six months ended September 30, 2016 and 2015, respectively, at various exercise prices based on the closing market price of the Company's common stock on the date of the grant. The stock options generally vest (i) on the one-year anniversary of the grant date, (ii) quarterly over a three-year period, (iii) quarterly over a four-year period, or (iv) over a four-year period, with 25% vesting on the one-year anniversary of the vesting commencement date, and the remainder vesting on a monthly basis ratably over the remaining term.

A summary of the Company's stock option activity for the six months ended September 30, 2016 is as follows:



	Options	Weighted- Average Exercise Price	Aggregate Intrinsic Value
Outstanding at March 31, 2016	9,614,627	\$ 4.79	\$1,927,137
Options granted	1,803,140	\$ 3.85	
Options canceled / forfeited	(56,955 )	\$ 5.05	
Options exercised	(206,266 )	\$ 2.42	\$328,691
Outstanding at September 30, 2016	11,154,546	\$ 4.68	\$7,439,063
Vested and Exercisable at September 30, 2016	6,347,222	\$ 4.59	\$6,054,006

The weighted-average remaining contractual term of options exercisable and outstanding at September 30, 2016 was approximately 5.96 years.

The Company uses the Black-Scholes valuation model to calculate the fair value of stock options. Stock-based compensation expense is recognized over the vesting period using the straight-line method. The fair value of stock options was estimated at the grant date using the following weighted average assumptions:

	Three Months Ended September 30, 2016	Three Months Ended September 30, 2015	Six Months Ended September 30, 2016	Six Months Ended September 30, 2015
Dividend yield	—	—	—	—
Volatility	72.28	% 74.26	% 72.04	% 74.25
Risk-free interest rate	1.07	% 1.48	% 1.10	% 1.60
Expected life of options	6.00 years	6.00 years	6.00 years	6.00 years
Weighted average grant date fair value	\$ 2.57	\$ 1.39	\$ 2.44	\$ 2.70

The assumed dividend yield was based on the Company's expectation of not paying dividends in the foreseeable future. Due to the Company's limited historical data, the estimated volatility incorporates the historical and implied volatility of comparable companies whose share prices are publicly available. The risk-free interest rate assumption was based on the U.S. Treasury rates. The weighted average expected life of options was estimated using the average of the contractual term and the weighted average vesting term of the options. Certain options granted to consultants are subject to variable accounting treatment and are required to be revalued until vested.

The total stock option-based compensation recorded as operating expense was approximately \$1,734,000 and \$2,098,000 for the three months ended September 30, 2016 and 2015, respectively, and \$3,139,000 and \$3,775,000 for the six months ended September 30, 2016 and 2015, respectively. Expense included in research and development was \$260,000 and \$277,000 for the three months ended September 30, 2016 and 2015, respectively, and \$650,000 and \$626,000 for the six months ended September 30, 2016 and 2015, respectively. Expense included in general and administrative was \$1,474,000 and \$1,821,000 for the three months ended September 30, 2016 and 2015, respectively, and \$2,489,000 and \$3,149,000 for the six months ended September 30, 2016 and 2015, respectively.

The total unrecognized compensation cost related to unvested stock option grants as of September 30, 2016 was approximately \$13,580,000 and the weighted average period over which these awards are expected to vest is 2.52 years.

#### Employee Stock Purchase Plan

In June 2016, our Board of Directors adopted, and in August 2016 stockholders subsequently approved, the 2016 Employee Stock Purchase Plan ("ESPP"). We reserved 1,500,000 shares of common stock for issuance thereunder. The ESPP permits employees after five months of service to purchase common stock through payroll deductions, limited to 15 percent of each employee's compensation up to \$25,000 or 10,000 shares per employee per year. Shares under the ESPP are purchased at 85 percent of the fair market value at the lower of (i) the closing price on the first trading day of the six-month purchase period or (ii) the closing price on the last trading day of the six-month purchase period. The initial offering period commenced in September 2016. At September 30, 2016, there were 1,500,000 shares available for purchase under the ESPP.

The Company uses the Black-Scholes valuation model to calculate the fair value of ESPP shares. Stock-based compensation expense is recognized over the purchase period using the straight-line method. The fair value of ESPP

shares was estimated at the purchase period commencement date using the following weighted average assumptions:

	Three Months Ended September 30, 2016		Six Months Ended September 30, 2016	
Dividend yield	—		—	
Volatility	72.89	%	72.89	%
Risk-free interest rate	0.47	%	0.47	%
Expected term	0.50 years		0.50 years	
Weighted average grant date fair value	\$ 1.22		\$ 1.22	

The assumed dividend yield was based on the Company's expectation of not paying dividends in the foreseeable future. Due to the Company's limited historical data, the estimated volatility incorporates the historical and implied volatility of comparable companies whose share prices are publicly available. The risk-free interest rate assumption was based on the U.S. Treasury rates. The expected life is the 6-month purchase period.

## Warrants

During the three and six months ended September 30, 2016, 160,000 warrants were exercised through a cashless exercise provision in exchange for the issuance of 123,104 shares of common stock. During the three and six months ended September 30, 2015, 0 and 38,234 warrants were exercised through a cashless exercise provision in exchange for the issuance of 0 and 30,186 shares of common stock. In addition, during the six months ended September 30, 2015, a warrant that was previously expected to be issued to a service provider and had been expensed in prior periods at its approximate value of \$130,000, was cancelled, and the amount was reversed against operating expense during the period.

Of the warrants exercised during the six months ended September 30, 2016 and 2015, 0 and 38,234, respectively, were derivative liabilities and were valued at the settlement date. For the six months ended September 30, 2016 and 2015, respectively, approximately \$0 and \$138,000, respectively, of the warrant liability was extinguished due to the exercise of these warrants. (See Note 2).

During November 2014, the Company entered into an agreement with a consultant for services. In connection with the agreement, the Company issued 145,000 warrants to purchase common stock, at a price of \$6.84, with a life of five years, to be earned over a seventeen-month service period ending on March 31, 2016. The final number of vested warrant shares was 95,000, based on management's judgment of the satisfaction of specific performance metrics. The fair value of the warrants was estimated to be approximately \$74,000, which was revalued and amortized over the term of the consulting agreement. These warrants were classified as equity instruments because they did not contain any anti-dilution provisions. The Black-Scholes model, using a volatility rate of 73.4% and a risk-free interest rate factor of 1.21%, was used to determine the value as of March 31, 2016. The Company recognized an expense reduction of approximately \$9,000 and expense of approximately \$25,000 during the three and six months ended September 30, 2015, respectively, related to these services. As of March 31, 2016, these warrants were fully expensed.

The following table summarizes warrant activity for the six months ended September 30, 2016:

	Warrants	Weighted-Average Exercise Price
Balance at March 31, 2016	1,046,813	\$ 2.29
Granted	—	\$ —
Exercised	(160,000 )	\$ 1.00
Cancelled	—	\$ —
Balance at September 30, 2016	886,813	\$ 2.52

The warrants outstanding at September 30, 2016 are exercisable at prices between \$0.85 and \$7.62 per share, and have a weighted average remaining term of approximately 0.86 years.

Common stock reserved for future issuance

Common stock reserved for future issuance consisted of the following at September 30, 2016:

Common stock warrants outstanding	886,813
Common stock options outstanding under the 2008 Plan	622,192
Common stock options outstanding and reserved under the 2012 Plan	14,111,114
Common stock reserved under the 2016 Employee Stock Purchase Plan	1,500,000
Restricted stock units outstanding under the 2012 Plan	1,129,469
Total	18,249,588

#### Preferred stock

The Company is authorized to issue 25,000,000 shares of preferred stock. There are no shares of preferred stock currently outstanding, and the Company has no current plans to issue shares of preferred stock.

#### Note 4. Commitments and Contingencies

##### Operating leases

The Company leases laboratory and office space in San Diego, California under three non-cancelable leases as described below.

Since July 2012, the Company has leased its main facilities at 6275 Nancy Ridge Drive, San Diego, CA 92121. The lease, as amended in 2013 and 2015, consists of approximately 30,895 rentable square feet containing laboratory, clean room and office space. Monthly rental payments are currently approximately \$83,000 per month with 3% annual escalators. The lease term expires September 1, 2021 with the option to terminate on or after September 1, 2019. The Company also has a right of first refusal on adjacent additional premises of approximately 14,700 square feet.

On January 9, 2015, the Company entered into an agreement to lease a second facility consisting of 5,803 rentable square feet of office and lab space located at 6310 Nancy Ridge Drive, San Diego, CA 92121. The term of the lease is 36 months, beginning on February 1, 2015 and ending on January 31, 2018, with monthly rental payments of approximately \$12,000 commencing on April 1, 2015. In addition, there are annual rent escalations of 3% on each 12-month anniversary of the lease commencement date.

On December 28, 2015, the Company entered into an agreement to lease a third facility consisting of 12,088 rentable square feet of office space located at 6166 Nancy Ridge Drive, San Diego, CA 92121. The term of the lease is 12 months, beginning on February 1, 2016 and ending on January 31, 2017, with monthly rental payments of \$15,000 commencing on February 1, 2016.

Rent expense was approximately \$302,000 and \$272,000 for the three months ended September 30, 2016 and 2015, respectively, and \$605,000 and \$549,000 for the six months ended September 30, 2016 and 2015, respectively.

Future minimum rental payments required under operating leases that have initial or remaining non-cancelable lease terms in excess of one year as of September 30, 2016, are as follows (in thousands):

Fiscal year ended March 31, 2017	\$642
Fiscal year ended March 31, 2018	1,148
Fiscal year ended March 31, 2019	1,044
Fiscal year ended March 31, 2020	1,072
Fiscal year ended March 31, 2021	1,104
Thereafter	468
<b>Total</b>	<b>\$5,478</b>

##### Legal Matters

In addition to commitments and obligations in the ordinary course of business, the Company may be subject, from time to time, to various claims and pending and potential legal actions arising out of the normal conduct of its business. The Company assesses contingencies to determine the degree of probability and range of possible loss for potential accrual in its financial statements. Because litigation is inherently unpredictable and unfavorable resolutions

could occur, assessing litigation contingencies is highly subjective and requires judgments about future events. When evaluating contingencies, the Company may be unable to provide a meaningful estimate due to a number of factors, including the procedural status of the matter in question, the presence of complex or novel legal theories, and/or the ongoing discovery and development of information important to the matters. In addition, damage amounts claimed in litigation against it may be unsupported, exaggerated or unrelated to possible outcomes, and as such are not meaningful indicators of its potential liability.

The Company regularly reviews contingencies to determine the adequacy of its accruals and related disclosures. During the period presented, the Company has not recorded any accrual for loss contingencies associated with such claims or legal proceedings; determined that an unfavorable outcome is probable or reasonably possible; or determined that the amount or range of any possible loss is reasonably estimable. However, the outcome of legal proceedings and claims brought against the Company is subject to significant uncertainty. Therefore, although management considers the likelihood of such an outcome to be remote, if one or more of these legal matters were resolved against the Company in a reporting period, the Company's consolidated financial statements for that reporting period could be materially adversely affected.

## Note 5. Concentrations

### Credit risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of temporary cash investments. The Company maintains cash balances at various financial institutions primarily located within the United States. Accounts at these institutions are secured by the Federal Deposit Insurance Corporation. Balances may exceed federally insured limits. The Company has not experienced losses in such accounts, and management believes that the Company is not exposed to any significant credit risk with respect to its cash and cash equivalents.

The Company is also potentially subject to concentrations of credit risk in its revenues and accounts receivable. Because it is in the early commercial stage, the Company's revenues to date have been derived from a relatively small number of customers and collaborators. However, the Company has not historically experienced any accounts receivable write-downs and management does not believe significant credit risk exists as of September 30, 2016.

## Note 6. Recent Accounting Pronouncements

In May 2014, the FASB issued Accounting Standards Update ("ASU") No. 2014-09, Revenue from Contracts with Customers, which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The standard will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. The new standard was originally effective for public companies for annual reporting periods beginning after December 15, 2016, with no early application permitted. In August 2015, the FASB issued ASU No. 2015-14 that defers by one year the effective date for all entities, with application permitted as of the original effective date. The updated standard becomes effective for us on April 1, 2018, with early adoption permitted as of April 1, 2017. The standard permits the use of either the retrospective or cumulative effect transition method. We are evaluating the effect that this update will have on our consolidated financial statements and related disclosures. We have not yet selected a transition method nor have we determined the effect of this updated standard on our ongoing financial reporting.

In February 2016, the FASB issued ASU 2016-02, Leases, which requires an entity to recognize lease assets and lease liabilities on the balance sheet for leases with terms of more than 12 months and to disclose key information about leasing arrangements. This new guidance is effective for us on April 1, 2019, with early adoption permitted in any interim or annual period. The Company is currently evaluating the impact that this guidance will have on its financial statements and related disclosures.

## Note 7. Subsequent Events

On October 25, 2016, the Company closed the issuance and sale of 10,065,000 shares (the "2016 Offering") of its common stock, par value \$0.001 per share, which included 1,065,000 shares of common stock issued pursuant to the partial exercise of the Underwriters' option to purchase additional shares. The 2016 Offering was effected pursuant to



an Underwriting Agreement (the “2016 Underwriting Agreement”), dated October 20, 2016, with Jefferies LLC (the “Representative”), acting as representative of the underwriters named in the 2016 Underwriting Agreement (the “Underwriters”). The price to the public in the 2016 Offering was \$2.75 per share, and the Underwriters purchased the shares from the Company pursuant to the 2016 Underwriting Agreement at a price of \$2.585 per share. The net proceeds to the Company from the 2016 Offering were approximately \$25,600,000, after deducting underwriting discounts and commissions and estimated expenses payable by the Company.

The 2016 Offering was made pursuant to the Company’s shelf registration statement on Form S-3, initially filed with the Securities and Exchange Commission (“SEC”) on February 27, 2015 and was declared effective by the SEC on March 17, 2015 (File No. 333-202382) and the related prospectus supplement filed with the SEC pursuant to Rule 424(b) under the Securities Act of 1933, as amended (the “Securities Act”), on October 21, 2016.

The 2016 Underwriting Agreement contains customary representations, warranties and agreements by the Company, customary conditions to closing, indemnification obligations of the Company and the Underwriter, including for liabilities under the Securities Act, other obligations of the parties and termination provisions. Concurrently with the execution of the 2016 Underwriting Agreement, each of the Company’s directors and executive officers entered into a lock-up agreement with the Underwriters that prohibits, subject to specified exceptions, the sale, transfer or other disposition of securities of the Company without the consent of the Representative for a period ending 90 days following October 20, 2016. A copy of the 2016 Underwriting Agreement is filed as Exhibit 10.3 to this Quarterly Report on Form 10-Q. The 2016 Underwriting Agreement is included as an exhibit to provide interested persons with information regarding its terms, but is not intended to provide any other factual information about the Company. The representations, warranties and covenants contained in the 2016 Underwriting Agreement were made only for purposes of the 2016 Underwriting Agreement as of specific dates indicated therein, were solely for the benefit of the parties to the 2016 Underwriting Agreement, and

may be subject to limitations agreed upon by the parties, including being qualified by confidential disclosures exchanged between the parties in connection with the execution of the 2016 Underwriting Agreement.

On October 24, 2016, the Company signed a third amendment to the existing lease for its main facilities at 6275 Nancy Ridge Drive, San Diego, CA to lease adjacent additional premises of approximately 14,685 rentable square feet containing laboratory, clean room and office space. Monthly rental payments for this additional space will be approximately \$37,000 per month with 3% annual escalators. The lease term for this additional space expires December 15, 2018.

## ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following management's discussion and analysis of financial condition and results of operations should be read in conjunction with the Company's historical consolidated financial statements and the related notes thereto included in our Annual Report on Form 10-K for the fiscal year ended March 31, 2016. This discussion and analysis contains forward-looking statements, such as statements related to our plans, objectives, expectations and intentions. Any statements that are not statements of historical fact are forward-looking statements. When used, the words "believe," "plan," "intend," "anticipate," "target," "estimate," "expect" and the like, and/or future tense or conditional constructions such "will," "may," "could," "should," or similar expressions, identify certain of these forward-looking statements. These forward-looking statements speak only as of the date of this Quarterly Report on Form 10-Q and are subject to risks and uncertainties, including those described in "Item 1A—Risk Factors" of this Quarterly Report on Form 10-Q that could cause our actual results or events to differ materially from those expressed or implied by such forward-looking statements. Except to the limited extent required by applicable law, the Company does not undertake any obligation to update forward-looking statements to reflect events or circumstances occurring after the date of this Quarterly Report.

### Basis of Presentation

References in this section to "Organovo Holdings, Inc.," "Organovo Holdings," "we," "us," "our," "the Company" and "our Company" refer to Organovo Holdings, Inc. and its consolidated subsidiaries.

On February 8, 2012, Organovo, Inc., a privately held Delaware corporation, merged with and into Organovo Acquisition Corp., a wholly-owned subsidiary of the Company, with Organovo, Inc. surviving the merger as a wholly-owned subsidiary of the Company (the "Merger"). As a result of the Merger, the Company acquired the business of Organovo, Inc., and has continued the business operations of Organovo, Inc.

Organovo, Inc. was founded in Delaware in April 2007. Activities since Organovo, Inc.'s inception through September 30, 2016 have been devoted primarily to technology and product development, raising capital and building infrastructure.

In January 2016, we announced that our wholly-owned subsidiary, Samsara, commenced commercial operations. We formed Samsara to serve as a key source of certain of the primary human cells that we utilize in our products and services and in the development of therapeutic products. In addition to serving as one of our key suppliers, Samsara offers human cells for use by life science customers, both directly or through distribution partners.

In addition, in September 2015, we established a wholly-owned subsidiary, Organovo UK, Ltd., to establish a sales presence in Europe. As of September 30, 2016, there has been no significant activity related to this subsidiary.

The condensed consolidated financial statements included in this Form 10-Q have been prepared in accordance with the Securities and Exchange Commission (the "SEC") instructions to Quarterly Reports on Form 10-Q. Accordingly, the condensed consolidated financial statements presented elsewhere in this Form 10-Q and discussed below are unaudited and do not contain all the information required by U.S. generally accepted accounting principles ("GAAP") to be included in a full set of financial statements. The audited financial statements for the year ended March 31, 2016, filed with the SEC on Form 10-K on June 9, 2016 include a summary of our significant accounting policies and should be read in conjunction with this Form 10-Q. In the opinion of management, all material adjustments necessary to present fairly the results of operations for such periods have been included in this Form 10-Q. All such adjustments are of a normal recurring nature. The results of operations for interim periods are not necessarily indicative of the results of operations for the entire year.

## Overview

We are an early commercial stage company focused on developing and commercializing functional 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 are advancing a paradigm shift in the generation of three-dimensional (“3D”) human tissues, by utilizing our proprietary platform technology to create human tissue constructs in 3D that mimic native human tissue composition, architecture, and function. We leverage our unique 3D human tissue models to improve the current industry standard cell-based and animal model testing approaches to drug discovery and development by creating 3D tissues constructed solely of human cells. We believe our foundational approach to the 3D printing of living tissues, as disclosed in peer-reviewed scientific publications, and the continuous evolution of our core bioengineering technology platform combine to provide us with the opportunity to fill many critical gaps in commercially available preclinical human tissue modeling and tissue transplantation.

In November 2014, we announced the commercial release of our first product, the ExVive™ Human Liver Tissue for use in toxicology and other preclinical drug testing. Initial revenues derived from the product have been and will continue to be predominantly through our fee-based research service model, which involves testing compounds provided to us for analysis by our customers. Prior to initiating the service, our technical staff assists customers in determining the extent of testing to be conducted utilizing our ExVive Human Liver Tissue. Testing may include the analysis of one or multiple compounds under various dosing and duration protocols to determine toxicity and metabolic effects of the test compounds on the tissue model. Projects may involve multiple deliverables which are clearly defined and based on pricing as stated in the related customer agreements.

In September 2016, we began commercial contracting for our second tissue service, the ExVive Human Kidney Tissue. This kidney proximal tubule model is a natural expansion of our preclinical product and service portfolio, allowing customers to study the effects of drug exposure on a key portion of the human kidney relevant to drug discovery and development. We have signed multiple commercial orders and are collaborating on toxicology panels and transporter studies with our customers.

In addition to our ExVive Human Liver Tissue and ExVive Human Kidney Tissue, we have entered into collaborative research agreements with pharmaceutical corporations and academic medical centers to develop additional tissue models. We have also secured federal grants, including Small Business Innovation Research grants, to support the development of our technology.

In October 2016, we announced our plan to develop 3D bioprinted human liver tissue for direct transplantation to patients. Our program to develop this therapeutic tissue is based on the achievement of promising results in preclinical animal studies demonstrating engraftment, vascularization and sustained functionality of our bioprinted liver tissue, including stable detection of liver-specific proteins and metabolic enzymes. We expect to pursue this opportunity with a formal preclinical development program.

We continuously engage in research and development to enhance our platform technology, to develop new product and service offerings and to pursue our therapeutic initiatives. Our research and development efforts include internal initiatives as well as collaborative development opportunities with third parties.

#### Critical Accounting Policies, Estimates, and Judgments

Our financial statements are prepared in accordance with GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. We continually evaluate our estimates and judgments, the most critical of which are those related to revenue recognition, valuation of long-lived assets and warrant liability, stock-based compensation and the timing of the achievement of collaboration milestones. We base our estimates and judgments on historical experience and other factors that we believe to be reasonable under the circumstances. Materially different results can occur as circumstances change and additional information becomes known. Besides the estimates identified above that are considered critical, we make many other accounting estimates in preparing our financial statements and related disclosures. All estimates, whether or not deemed critical, affect reported amounts of assets, liabilities, revenues and expenses, as well as disclosures of contingent assets and liabilities. These estimates and judgments are also based on historical experience and other factors that are believed to be reasonable under the circumstances. Materially different results can occur as circumstances change and additional information becomes known, even for estimates and judgments that are not deemed critical.

For further information, refer to the Company's audited financial statements and notes thereto included in the Annual Report on Form 10-K for the year ended March 31, 2016, filed with the SEC on June 9, 2016.

## Results of Operations

Comparison of the three months ended September 30, 2016 and 2015

### Revenues

For the three months ended September 30, 2016, total revenue of \$1.4 million was \$1.1 million, or approximately 358%, higher than total revenue for the three months ended September 30, 2015. Product and service revenue of approximately \$1.0 million for the second quarter of fiscal 2017 increased 449% over product and service revenue of approximately \$0.2 million in the second quarter of the prior year. This increase was primarily driven by customer adoption of the ExVive Human Liver Tissue product and research services, which were launched commercially in November 2014. In addition, collaboration revenue increased more than \$0.3 million as compared to the second quarter of fiscal 2016. This increase was driven by substantial milestone achievements under a collaboration agreement with a pharmaceutical corporation to develop multiple custom tissue models.

## Costs and Expenses

### Cost of Revenues

Cost of product and service revenues, which reflects expenses related to manufacturing our products and delivering services was \$0.4 million for the three months ended September 30, 2016, compared to zero for the three months ended September 30, 2015. The Company began reporting cost of revenues in the first quarter of fiscal 2017. Cost of revenues for the three months ended September 30, 2015 was immaterial and therefore included in research and development expenses.

### Research and Development Expenses

Research and development expenses were approximately \$4.5 million, a decrease of \$0.2 million, or 4%, from the prior year period. The decrease was primarily due to a \$0.2 million reduction in outsourced professional services costs and a \$0.2 million reduction in lab supplies costs. These decreases were partially offset by a \$0.3 million increase in staffing expense due to the increase in full-time research and development staff from an average of sixty-six full-time employees for the three months ended September 30, 2015 to an average of seventy-nine full-time employees for the three months ended September 30, 2016.

### Selling, General and Administrative Expenses

For the three months ended September 30, 2016, selling, general and administrative expenses were approximately \$5.9 million, a decrease of \$0.9 million, or 14%, over the prior year period of approximately \$6.8 million. This decrease was largely due to a decrease in compensation expense of \$0.6 million related to non-recurring separation and payroll costs for two departed executives and a \$0.4 million reduction in outside consulting costs. This decrease was partially offset as the Company increased its average selling, general and administrative headcount from twenty-seven full-time employees in the second quarter of fiscal 2016 to thirty-six full-time employees for the second quarter of fiscal 2017 to provide strategic infrastructure in developing collaborative relationships and the commercialization of research-derived product introductions.

### Other Income (Expense)

Other income was less than \$0.1 million for the three months ended September 30, 2016 and consisted primarily of interest income, which increased from the same period of fiscal 2016 due to higher average yields. Other expense was less than \$0.1 million for the three months ended September 30, 2015 and consisted primarily of interest income and losses related to revaluation of warrant derivative liabilities.

## Comparison of the six months ended September 30, 2016 and 2015

### Revenues

For the six months ended September 30, 2016, total revenue of \$2.3 million was \$1.7 million, or approximately 274%, higher than total revenue for the six months ended September 30, 2015. Product and service revenue of approximately \$1.7 million for the first half of fiscal 2017 increased 329% over product and service revenue of \$0.4 million in the first half of fiscal 2016. This increase was primarily driven by customer adoption of the ExVive Human Liver Tissue product and research services, which were launched commercially in November 2014. In addition, collaboration revenue increased approximately \$0.5 million as compared to the first half of fiscal 2016. This increase was driven by substantial milestone achievements under a collaboration agreement with a pharmaceutical corporation to develop multiple custom tissue models. The increases in product and services revenues and collaborations revenue offset a

\$0.2 million decline in grant revenue resulting from the completion of a significant grant in the first half of fiscal 2016.

#### Costs and Expenses

##### Cost of Revenues

Cost of product and service revenues, which reflects expenses related to manufacturing our products and delivering services was \$0.6 million for the six months ended September 30, 2016, compared to zero for the six months ended September 30, 2015. Cost of revenues for the six months ended September 30, 2015 was immaterial and was therefore included in research and development expense.

##### Research and Development Expenses

Research and development expenses were approximately \$9.0 million, an increase of \$0.1 million, or 1% over the prior year period. The increase primarily resulted from an increase in research staff to support obligations under existing collaborative research



agreements as well as an expansion in product development staff and activities to support sales of commercial research services. Full-time research and development staffing increased from an average of sixty-two full-time employees for the six months ended September 30, 2015 to an average of eighty full-time employees for the six months ended September 30, 2016, resulting in an increase in compensation expense of nearly \$1.0 million. This increase was partially offset by a \$0.3 million reduction in lab supplies costs and a \$0.5 million reduction in consulting costs.

#### Selling, General and Administrative Expenses

For the six months ended September 30, 2016, selling, general and administrative expenses were approximately \$11.0 million, a decrease of \$0.5 million, or 4%, over the prior year period of approximately \$11.5 million. This decrease was primarily due in part to a \$1.1 million decrease in compensation expense related to the absence of non-recurring separation and payroll costs as well as stock-based compensation expenses for two departed executives which offset a \$0.6 million increase in other compensation costs due to an increase in administrative headcount from an average of twenty-five full-time employees to an average of thirty-five full-time employees to provide strategic infrastructure in developing collaborative relationships and the commercialization of research-derived product introductions.

#### Other Income (Expense)

Other income was less than \$0.1 million for the six months ended September 30, 2016 and consisted primarily of interest income, which increased from the same period of fiscal 2016 due to higher average yields. Other expense was less than \$0.1 million for the six months ended September 30, 2015 and consisted primarily of losses related to revaluation of warrant derivative liabilities, partially offset by interest income.

#### Financial Condition, Liquidity and Capital Resources

The Company has primarily devoted its efforts to technology and product development, raising capital and building infrastructure. In November 2014, the Company announced the full commercial release of its first product, the ExVive Human Liver Tissue for use in toxicology and other preclinical drug testing, and has built a sales and marketing and research and development infrastructure to support the commercialization of research services for the ExVive Human Liver Tissue and the NovoView Human Kidney Tissue.

The Company has incurred negative cash flows from operations. As of September 30, 2016, the Company had cash and cash equivalents of approximately \$51.7 million and an accumulated deficit of \$179.1 million. The Company also had negative cash flow from operations of \$14.9 million during the six months ended September 30, 2016. At March 31, 2016, the Company had cash and cash equivalents of approximately \$62.1 million and an accumulated deficit of \$160.9 million.

At September 30, 2016, the Company had total current assets of approximately \$53.7 million and current liabilities of approximately \$4.2 million, resulting in working capital of \$49.5 million. At March 31, 2016, we had total current assets of approximately \$63.7 million and current liabilities of approximately \$4.5 million, resulting in working capital of \$59.2 million.

Net cash used by operating activities for the six months ended September 30, 2016 was approximately \$14.9 million as compared to \$14.9 million used in operating activities for the six months ended September 30, 2015.

Net cash used in investing activities was approximately \$0.5 million and \$1.6 million for the six months ended September 30, 2016 and 2015, respectively. This decrease can be attributed to reduced capital spending during the six months ended September 30, 2016.

Net cash provided by financing activities decreased from approximately \$43.2 million provided during the six months ended September 30, 2015 to approximately \$5.0 million provided during the six months ended September 30, 2016 due primarily to the timing of the closing of the Company's public offering of common stock in September 2015 that yielded net proceeds of approximately \$43.1 million. During the six months ended September 30, 2016 the Company raised net proceeds of \$4.5 million through the sale of common stock in "at-the-market" offerings and approximately \$0.5 million through stock option exercises. The Company has used these net proceeds for general corporate purposes, including research and development, the commercialization of our products, general administrative expenses, and working capital and capital expenditures.

Through September 30, 2016, we have financed our operations primarily through the sale of convertible notes, the private placement of equity securities, the sale of common stock through public offerings, and from revenue derived from grants, collaborative research agreements, product sales and research-based services. In addition, on October 25, 2016, we closed the issuance

and sale of 10,065,000 shares of our common stock in an underwritten public offering. We received net proceeds of approximately \$25.6 million in the offering, after deducting underwriting discounts and commissions and our estimated expenses. Based on our current operating plan and available cash resources, we have sufficient resources to fund our ongoing operations as currently planned for at least the next twelve months.

Our future capital needs will depend on the revenues we generate through our commercialization efforts and the resources we elect to spend to pursue our product development efforts and implement our business plan. As a result, we cannot predict with certainty when we may be required or otherwise elect to secure additional capital to fund our future operations and business plans.

We intend to cover our future operating expenses through cash on hand, revenue derived from research service agreements, product sales, grants, and collaborative research agreements and through the issuance of additional equity or debt securities. Depending on market conditions, we cannot be sure that additional financing will be available when needed or that, if available, financing will be obtained on terms favorable to us or to our stockholders.

The Company has an effective shelf registration statement on Form S-3 (File No. 333-202382), or the 2015 Shelf, that expires on March 17, 2018. As of September 30, 2016, the Company is authorized to offer and sell under the 2015 Shelf, in one or more offerings, common stock, preferred stock, debt securities, warrants to purchase common stock, preferred stock or debt securities, or any combination of the foregoing, either individually or as units comprising one or more of the other securities. On July 20, 2016, the Company filed a prospectus supplement to the 2015 Shelf to register the sale of up to \$26.6 million of shares of its common stock in at-the-market offerings pursuant to an equity offering sales agreement it had entered into with an investment banking firm in December 2014. During the three months ended September 30, 2016, the Company sold 997,181 shares of common stock in at-the-market offerings, with gross proceeds of approximately \$4.7 million, leaving an additional \$21.9 million that can be raised through this at-the-market program.

Based on its use of the 2015 Shelf through October 25, 2016, the Company cannot raise more than an aggregate of \$111.6 million in future offerings under the 2015 Shelf, including its at-the-market program.

Having insufficient funds may require us to delay, scale back, or eliminate some or all of our development programs or relinquish rights to our technology on less favorable terms than we would otherwise choose. Failure to obtain adequate financing could eventually adversely affect our ability to operate as a going concern. If we raise additional funds from the issuance of equity securities, substantial dilution to our existing stockholders would likely result. If we raise additional funds by incurring debt financing, the terms of the debt may involve significant cash payment obligations as well as covenants and specific financial ratios that may restrict our ability to operate our business.

As of September 30, 2016, the Company had 93,750,862 total issued and outstanding shares of common stock, and five-year warrants for the opportunity to purchase an additional 665,443 shares of common stock at exercise prices between \$0.85 and \$1.00 per share and 221,370 warrants with terms between two and five years and exercise prices between \$2.28 and \$7.62 per share.

In addition, the Company's 2008 Equity Incentive Plan provides for the issuance of up to 896,256 shares of its outstanding common stock and the 2012 Equity Incentive Plan, as amended, provides for the issuance of up to 17,553,986 shares of its common stock, to executive officers, directors, advisory board members, employees and consultants. Additionally, 1,500,000 shares of common stock have been reserved for issuance under the 2016 Employee Stock Purchase Plan. In aggregate, issued and outstanding common stock, shares underlying outstanding warrants, and shares issuable under outstanding equity awards or reserved for future issuance under the 2008 and 2012 Equity Incentive Plans and the 2016 Employee Stock Purchase Plan total 112,000,450 shares of common stock as of September 30, 2016. This aggregate amount does not include the 10,065,000 shares issued by the Company in its

October 2016 financing

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements, including unrecorded derivative instruments that have or are reasonably likely to have a current or future material effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources. We have certain warrants and options outstanding but we do not expect to receive sufficient proceeds from the exercise of these instruments unless and until the underlying securities are registered, and/or all restrictions on trading, if any, are removed, and in either case the trading price of our common stock is significantly greater than the applicable exercise prices of the options and warrants.

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## Effect of Inflation and Changes in Prices

Management does not believe that inflation and changes in price will have a material effect on the Company's operations.

## Contractual Obligations

In the normal course of business, we enter into contracts and commitments that obligate us to make payments in the future. The table below sets forth our significant contractual obligations and related scheduled payments as of September 30, 2016 (in thousands):

	Total	Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years
Operating lease obligations (A)	\$5,478	\$ 1,225	\$ 2,140	\$ 2,113	\$ -
Total	\$5,478	\$ 1,225	\$ 2,140	\$ 2,113	\$ -

(A) Operating lease obligations are primarily comprised of remaining payments due under the Company's facility leases.

## ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The primary objective of our investment activities is to preserve our capital for the purpose of funding our operations. To achieve these objectives, our investment policy allows us to maintain a portfolio of cash, cash equivalents, and short-term investments in a variety of securities, including money market funds. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because the majority of our investments are comprised of cash and cash equivalents. We currently do not hedge interest rate exposure. Due to the nature of our short-term investments, we believe that we are not subject to any material market risk exposure. We have limited foreign currency risk exposure as our business operates primarily in U.S. dollars. We do not have any significant foreign currency or other derivative financial instruments.

## ITEM 4. CONTROLS AND PROCEDURES

## Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports filed pursuant to the Securities Exchange Act of 1934, as amended (the "Exchange Act") is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial and accounting officer, as appropriate, to allow timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Exchange Act) as of the end of the period covered by this report. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of the end of the quarterly period covered by this report were designed and operating effective.

#### Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act) that occurred during the fiscal quarter to which this report relates that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

#### Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and our Chief Financial Officer, do not expect that our disclosure controls or our internal control over financial reporting will prevent or detect all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated

goals under all potential future conditions. Projections of any evaluation of controls effectiveness to future periods are subject to risks. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

## PART II—OTHER INFORMATION

### ITEM 1. LEGAL PROCEEDINGS

See Note 4 of the Notes to the Unaudited Condensed Consolidated Financial Statements within this Form 10-Q for a discussion of our legal proceedings and contingencies.

### ITEM 1A. RISK FACTORS

In evaluating the Company and an investment in our common stock, we urge you to carefully consider the risks and other information in this Quarterly Report on Form 10-Q as well as the risk factors disclosed in our Annual Report on Form 10-K for the fiscal year ended March 31, 2016, filed with the Securities and Exchange Commission on June 9, 2016. There have been no material changes from the risk factors as previously disclosed in our Annual Report on Form 10-K. Any of the risks discussed in this Quarterly Report on Form 10-Q and in our Annual Report on Form 10-K, as well as additional risks and uncertainties not currently known to us or that we currently deem immaterial, could materially and adversely affect our results of operations or financial condition.

### ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

### ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

### ITEM 4. MINE SAFETY DISCLOSURE

Not applicable.



ITEM 5. OTHER INFORMATION

None.

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ITEM 6. EXHIBITS

The following exhibit index shows those exhibits filed with this report and those incorporated herein by reference:

Exhibit

No.	Description
2.1	Agreement and Plan of Merger and Reorganization, dated as of February 8, 2012, by and among Organovo Holdings, Inc. a Delaware corporation, Organovo Acquisition Corp., a Delaware corporation and Organovo, Inc., a Delaware corporation (incorporated by reference from Exhibit 2.1 to the Company's Current Report on Form 8-K, as filed with the SEC on February 13, 2012)
2.2	Certificate of Merger as filed with the Delaware Secretary of State effective February 8, 2012 (incorporated by reference from Exhibit 2.2 to the Company's Current Report on Form 8-K, as filed with the SEC on February 13, 2012)
2.3	Articles of Merger as filed with the Nevada Secretary of State effective December 28, 2011 (incorporated by reference from Exhibit 2.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission (the "SEC") on February 3, 2012 (the "February 2012 Form 8-K"))
2.4	Agreement and Plan of Merger, dated as of December 28, 2011, by and between Real Estate Restoration and Rental, Inc. and Organovo Holdings, Inc. (incorporated by reference from Exhibit 2.2 to the Company's Current Report on Form 8-K, as filed with the SEC on January 4, 2012)
2.5	Certificate of Merger as filed with the Delaware Secretary of State effective January 30, 2012 (incorporated by reference from Exhibit 2.3 to the February 2012 Form 8-K)
2.6	Agreement and Plan of Merger, dated as of January 30, 2012, by and between Organovo Holdings, Inc. (Nevada) and Organovo Holdings, Inc. (Delaware) (incorporated by reference from Exhibit 2.2 to the February 2012 Form 8-K)
2.7	Articles of Merger as filed with the Nevada Secretary of State effective January 30, 2012 (incorporated by reference from Exhibit 2.4 to the February 2012 Form 8-K)
3.1	Certificate of Incorporation of Organovo Holdings, Inc. (Delaware) (incorporated by reference from Exhibit 3.1 to the February 2012 Form 8-K)
3.2	Bylaws of Organovo Holdings, Inc. (Delaware) (incorporated by reference from Exhibit 3.2 to the February 2012 Form 8-K)
4.1	Form of Bridge Warrant of Organovo, Inc. (incorporated by reference from Exhibit 4.1 to the Company's Current Report on Form 8-K, as filed with the SEC on February 13, 2012)
4.2	Form of Warrant of Organovo Holdings, Inc. (\$1.00 exercise price) issued to Placement Agent (incorporated by reference from Exhibit 4.2(i) to the Company's Current Report on Form 8-K, as filed with the SEC on March 19, 2012)

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- 4.3 Form of Warrant of Organovo Holdings, Inc. (\$1.00 exercise price) issued to Placement Agent in exchange for Organovo, Inc. warrant issued to Selling Agent (incorporated by reference from Exhibit 4.2(iii) to the Company's Current Report on Form 8-K, as filed with the SEC on March 19, 2012)
- 10.1 Offer Letter, date July 31, 2016, by and between the Company and Craig Kussman (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K, as filed with the SEC on August 2, 2016)
- 10.2 2016 Employee Stock Purchase Plan, dated June 22, 2016 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the SEC on August 18, 2016)
- 10.3 Underwriting Agreement, dated October 20, 2016, between Organovo Holdings, Inc. and Jefferies LLC (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the SEC on October 25, 2016)
- 31.1 Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.\*
- 31.2 Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.\*
- 32.1 Certification pursuant to 18 U.S.C. Section 1350.\*
- 101 Interactive Data File\*

\* Filed herewith.

# Designates management contracts and compensation plans.

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SIGNATURES

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

ORGANOVO HOLDINGS, INC.

Date: November 3, 2016 By: /s/ Keith Murphy  
Name: Keith Murphy  
Title: Chairman of the Board,  
  
Chief Executive Officer and President  
  
(Principal Executive Officer)

Date: November 3, 2016 By: /s/ Craig Kussman  
Name: Craig Kussman  
Title: Chief Financial Officer  
  
(Principal Financial and Accounting Officer)