

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**FORM 8-K**

**CURRENT REPORT**

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

Date of Report (Date of earliest event reported): April 1, 2015

**ORGANOVO HOLDINGS, INC.**

(Exact name of registrant as specified in its charter)

**Commission File Number: 001-35996**

**Delaware**  
(State or other jurisdiction  
of incorporation)

**27-1488943**  
(I.R.S. Employer  
Identification No.)

**6275 Nancy Ridge Dr.,  
San Diego, California 92121**  
(Address of principal executive offices, including zip code)

**(858) 224-1000**  
(Registrant's telephone number, including area code)

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

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

**Item 7.01 Regulation FD Disclosure**

On April 1, 2015, Organovo Holdings, Inc. (the “Company”) issued a press release regarding data presented at the 2015 Experimental Biology conference in Boston, Massachusetts regarding the Company’s *in vitro* 3D bioprinted kidney tissue. A copy of the press release is attached hereto as Exhibit 99.1.

The information furnished on this Form 8-K, including Exhibit 99.1, shall not be deemed “filed” for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall the information be deemed incorporated by reference into any other filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except as expressly set forth by specific reference in such a filing.

**Item 9.01 Financial Statements and Exhibits**

(d) Exhibits

99.1 Press Release, dated April 1, 2015.

## SIGNATURES

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

**ORGANOVO HOLDINGS, INC.**

Date: April 1, 2015

/s/ Keith Murphy

Keith Murphy

Chief Executive Officer and President

# Organovo Describes First Fully Cellular 3D Bioprinted Kidney Tissue

April 1, 2015

SAN DIEGO, April 1, 2015 /PRNewswire/ -- **Organovo Holdings, Inc. (NYSE MKT: ONVO)** ("Organovo"), a three-dimensional biology company focused on delivering breakthrough 3D bioprinting technology, presented data on the company's *in vitro* three-dimensional kidney tissue at the 2015 Experimental Biology conference in Boston, Massachusetts.

"Kidney represents an ideal extension of Organovo's capabilities to 3D bioprint organ tissues that can be tremendously useful in pharmaceutical research," said Keith Murphy, Chairman and Chief Executive Officer at Organovo. "The results released today admirably demonstrate a proof of concept that kidney is on the way to becoming another core commercial tissue for Organovo. The product that we intend to build from these initial results can be an excellent expansion for our core customers in toxicology, who regularly express to us an interest in having better solutions for the assessment of human kidney toxicity."

For the first time, fully human kidney proximal tubular tissues have been generated that are three-dimensional, and consist of multiple tissue-relevant cell types arranged to recapitulate the renal tubular / interstitial interface. The tissues are fabricated using Organovo's proprietary NovoGen™ bioprinting platform, and will ultimately join the company's exVive3D™ Liver tissues to expand the repertoire of physiologically-relevant tissue systems available for toxicity and efficacy testing as well as disease modeling. Dr. Sharon Presnell, Chief Technology Officer and Executive Vice President of Research and Development, stated, "Our bioprinted human kidney tissue represents a significant technical advance over the simple monolayer cell line cultures that predominate today. The histologic and functional features of the initial prototypes are compelling, and the *in vitro* durability of the system will likely enable the assessment of drug effects at chronic, physiologically relevant doses. Furthermore, the cellular complexity of the system will likely support mechanistic investigations into drug responses, including end points that have been difficult or impossible to assess *in vitro*, including tubular fibrosis and post-injury recovery."

Key findings and attributes from Organovo's research include:

- The kidney proximal tubule tissue is multi-cellular and fully human, consisting of polarized renal proximal tubular epithelial cells (RPTEC) and a living interstitial layer comprised of renal fibroblasts (RF), and endothelial cells (EC)
- Immunohistochemical analysis shows clear evidence of intercellular junction formation (E-Cadherin+) between the epithelial cells, extensive formation of microvascular structures, and stable maintenance of the layered architecture for at least two weeks *in vitro*
- The epithelial cells within the multi-layered tubular model express CYP450 mRNAs and possess gamma glutamyl transferase (GGT) activity, both of which are indicators of RPTEC function. Importantly, our initial characterization shows that the expression of GGT increases over two weeks post-fabrication, indicating a gain-of-function over time

About Organovo Holdings, Inc.

Organovo designs and creates functional, three-dimensional human tissues for use in medical research and therapeutic applications. The Company develops 3D human disease models through internal development and in collaboration with pharmaceutical and academic partners. Organovo's 3D human tissues have the potential to accelerate the drug discovery process, enabling treatments to be developed faster and at lower cost. The company recently launched its initial product of the planned exVive3D™ portfolio offering, a 3D Human Liver Tissue for use in Toxicology and other preclinical drug testing. Additional products are in development, with anticipated release for an exVive3DTM Human Kidney Tissue in the latter half of calendar year 2016. The Company also actively

conducts early research on specific tissues for therapeutic use in direct surgical applications. In addition to numerous scientific publications, the Company's technology has been featured in The Wall Street Journal, Time Magazine, The Economist, and numerous other media outlets. Organovo is changing the shape of medical research and practice. Learn more at [www.organovo.com](http://www.organovo.com).

Sign up for email updates and connect with us on Twitter (@Organovo).

#### Safe Harbor Statement

Any statements contained in this press release that do not describe historical facts may constitute forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. Any forward-looking statements contained herein are based on current expectations, but are subject to a number of risks and uncertainties. The factors that could cause actual future results to differ materially from current expectations include, but are not limited to, risks and uncertainties relating to the Company's ability to develop, market and sell products based on its technology; the expected benefits and efficacy of the Company's products and technology; the market acceptance of the Company's products; and the Company's business, research, product development, regulatory approval, marketing and distribution plans and strategies. These and other factors are identified and described in more detail in our filings with the SEC, including our Quarterly Report on Form 10-Q filed with the SEC on February 6, 2015. You should not place undue reliance on these forward-looking statements, which speak only as of the date that they were made. These cautionary statements should be considered with any written or oral forward-looking statements that we may issue in the future. Except as required by applicable law, including the securities laws of the United States, we do not intend to update any of the forward-looking statements to conform these statements to reflect actual results, later events or circumstances or to reflect the occurrence of unanticipated events.

SOURCE Organovo Holdings, Inc.

Barry Michaels, Chief Financial Officer, 858-224-1000, ext. 3, [IR@organovo.com](mailto:IR@organovo.com), or Gerry Amato, Amato and Partners, LLC, Investor Relations, [gerald@amatoandpartners.com](mailto:gerald@amatoandpartners.com); Media Contact, Mike Renard, EVP, Commercial Operations, 858-224-1006, [mrenard@organovo.com](mailto:mrenard@organovo.com)