



Organovo Announces Initiation of Commercial Contracting for ExVive Human Kidney Tissue

September 7, 2016

SAN DIEGO, Sept. 07, 2016 (GLOBE NEWSWIRE) -- Organovo Holdings, Inc. (NASDAQ:ONVO) ("Organovo"), a three-dimensional biology company focused on delivering scientific and medical breakthroughs using its 3D bioprinting technology, today announced that it has begun commercial contracting for its second tissue service, the ExVive™ Human Kidney. This kidney proximal tubule model is a natural expansion of the Company's 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. Organovo has already signed multiple commercial orders and is collaborating on toxicology panels and transporter studies, including with two global, top 25 pharmaceutical companies, as part of an early access program.

The ExVive Human Kidney has demonstrated important functional aspects that offer significant value in preclinical testing, including:

- Demonstrated proximal tubule function for more than four weeks, as measured by gamma-glutamyl transferase (GGT) production;
- Tissue-like complexity that supports the detection of injury, compensation, and recovery
- Physiological expression of key transporters as measured by gene and protein expression, which allows for the assessment of kidney toxicity and drug:drug interactions by modeling normal tissue function;
- Modulatable activity of key renal transporters P-gp, SGLT2, and OCT2, demonstrating a high correlation to difficult to replicate human biology;
- Demonstrated toxicity of model kidney toxicant cisplatin, and inhibition of toxicity when blocking OCT2 function, demonstrating specific inhibition of cisplatin transport through a known transporter; and
- Barrier function (permeability) comparable to in-vivo values, as measured by trans-epithelial electrical resistance (TEER).

"The powerful data Organovo is releasing on the ExVive Kidney Tissue demonstrates significant potential value for our pharmaceutical customers," said Keith Murphy, chairman and CEO of Organovo. "The compelling symphony of transporter function and the demonstration of a response to a known toxicant boost our excitement as we bring to market an advanced way to investigate preclinical kidney toxicity of new drug candidates."

The Company and its customers released several posters and presentations during the scientific conferences at EUROTOX 2016 in Seville, Spain this week, and expects to continue to release information at the 12th Annual Applied Pharmaceutical Analysis Meeting during the week of September 12, 2016.

The Company believes that, as it penetrates the toxicology market, the ExVive Human Kidney tissue service has the potential to grow into the tens of millions in annual revenue and has \$100M+ revenue potential in the future as it pursues diligent sales and marketing efforts (inside of a total addressable market of over \$2B). This kidney revenue opportunity is expected to be accretive to previous market projections for liver tissue, which are of similar magnitude. The ExVive Human Kidney and Liver products are unique in the industry in the ability to replicate complex cell-cell interactions and key elements of native tissue architecture to enable the detection of multiple clinically-relevant modes of tissue injury and to provide the unique resolving power of a controlled human tissue microenvironment to investigate mechanism and develop solutions.

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 tissue models through internal development and in collaboration with pharmaceutical, academic and other 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's ExVive Human Liver and Kidney Tissues are used in toxicology and other preclinical drug testing. 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, Forbes, and numerous other media outlets. Organovo is changing the shape of life science research and transforming medical care. Learn more at www.organovo.com.

Forward-Looking Statements

Any statements contained in this press release that do not describe historical facts constitute forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. Forward-looking statements include, but are not limited to, statements about the potential benefits and functional use of the ExVive Human Kidney tissue and the potential customer demand and market opportunities for the ExVive Human Kidney and Liver tissues. 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 the Company's 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 and services based on its technology; the expected benefits and efficacy of the Company's products, services and technology, including the ExVive Human Kidney and Liver tissues; the market acceptance and potential market opportunities of the Company's products and services, including the ExVive Human Kidney and Liver tissues; the Company's business, research, product development, regulatory approval, marketing and distribution plans and strategies; the Company's ability to successfully complete the contracts and recognize the revenue represented by the contracts included in its previously reported total contract bookings and secure additional contracted collaborative relationships. These and other factors are identified and described in more detail in the Company's filings with the SEC, including its Annual Report on Form 10-K for the fiscal year ended March 31, 2016 and filed with the SEC on June 9, 2016 and its Quarterly Report on Form 10-Q for the period ended June 30, 2016 and filed with the SEC on August 4, 2016. You should not place undue reliance on these forward-looking statements, which speak only as of the date that they were made. These cautionary statements should be considered with any written or oral forward-looking statements that the Company may issue in the future. Except as required by applicable law, including the securities

laws of the United States, the Company does not intend to update any of the forward-looking statements to conform these statements to reflect actual results, later events or circumstances or to reflect the occurrence of unanticipated events.

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