VistaGen Therapeutics Reports Identification of Cell Surface Marker That Permits High-Yield Purification of Human Pluripotent Stem Cell-Derived Cardiomyocytes

October 25, 2011

Company Holds Exclusive Worldwide Rights to Intellectual Property Arising From These Discoveries

SOUTH SAN FRANCISCO, CA -- (MARKET WIRE) -- 10/25/11 -- VistaGen Therapeutics, Inc. (OTCBB: VSTA), a biotechnology company applying stem cell technology for drug rescue and cell therapy, announces the publication of original research funded by the Company that identifies an antibody useful in the identification and purification of cardiac progenitors and cardiomyocytes.

The research, titled Novel Use for SIRPA as a Specific Cell Surface Marker for the Isolation of Human Pluripotent Stem Cell-Derived Cardiomyocytes, stems from research funded in part by VistaGen and conducted by a collaborative team led by Dr. Gordon Keller at the University Health Network's McEwen Centre for Regenerative Medicine in Toronto. The results of these studies were published in the peer-reviewed journal, Nature Biotechnology, on October 23, 2011.

"The identification and use of the SIRPA antibody permits us to select the very earliest human cardiac progenitors, as well as mature cardiomyocytes, and study the important role of non-cardiomyocytes in the function and maturation of cardiomyocytes," said Dr. Ralph Snodgrass, President and Chief Scientific Officer of VistaGen. "Using this antibody, we can produce human cardiomyocytes with greater than 95% purity, without genetically modifying the cells and without antibiotic selection, which is a significant step forward for our cardiotoxicity bioassay system, CardioSafe 3D™, and our cell therapy initiatives."

The Keller team identified human cardiomyocyte specific markers by screening human embryonic stem cell (hESC)-derived cardiovascular populations with known antibodies. From this screen, the signal-regulatory protein alpha (SIRPA) was identified as a marker expressed specifically on hESC and induced pluripotent stem cell (iPSC)-derived cardiomyocytes and their precursors. Cell sorting and selection with the SIRPA antibody allowed for the enrichment of cardiac precursors and cardiomyocytes from hESC/iPSC differentiation cultures, yielding populations of up to 98% cardiac troponin T-positive cells. SIRPA-positive cells, when cultured, express the expected markers, transcription factors and cytoskeletal markers of cardiomyocytes, and can be maintained in culture for extended periods of time. These findings provide, for the first time, a simple method for isolating some of the earliest populations of cardiac precursors and mature cardiomyocytes from human pluripotent stem cell cultures. This readily adaptable technology offers a viable approach for generating large numbers of enriched, non-genetically modified, cardiomyocytes for numerous therapeutic applications.

Through its long-standing collaboration with Dr. Gordon Keller, who is also Chairman of the Company's Scientific Advisory Board, and a license agreement with the University Health Network, VistaGen has exclusive worldwide rights to intellectual property arising from this research conducted by Dr. Keller's laboratory. These studies, funded by VistaGen, are part of the Company's Human Clinical Trials in a Test Tube™ platform, which has proprietary applications in drug screening, cell therapy, and regenerative medicine.

About VistaGen Therapeutics
VistaGen is a biotechnology company applying human pluripotent stem cell technology for drug rescue and cell therapy. Drug rescue involves the combination of human pluripotent stem cell technology with modern medicinal chemistry to generate new chemical variants of once promising small molecule drug candidates that pharmaceutical companies have discontinued during preclinical or early clinical development due to heart or liver toxicity, despite positive efficacy data demonstrating their potential therapeutic and commercial benefits. VistaGen plans to use its pluripotent stem cell technology to generate early indications, or predictions, of how humans will ultimately respond to new drug candidates before they are ever tested in humans.

In parallel with its drug rescue activities, VistaGen is funding early-stage nonclinical studies focused on potential cell therapy applications of its Human Clinical Trials in a Test Tube™ platform.

Additionally, VistaGen will begin a Phase 1b clinical study of AV-101, a small molecule drug candidate for treatment of neuropathic pain, before the end of 2011. This study includes testing AV-101 in healthy volunteers using the intradermal capsaicin model of neuropathic pain. Neuropathic pain, a serious and chronic condition causing pain after an injury or disease of the peripheral or central nervous system, affects approximately 1.8 million people in the U.S. alone. VistaGen plans to initiate Phase 2 clinical studies of AV-101 in the fourth quarter of 2012. VistaGen is also exploring additional opportunities to leverage its current Phase 1 clinical program to enable additional Phase 2 clinical studies of AV-101 for epilepsy, Parkinson's disease and depression. To date, VistaGen has been awarded over $8.5 million from the U.S. National Institutes of Health (NIH) for development of AV-101.

Visit us at http://www.VistaGen.com, follow us at http://www.twitter.com/VistaGen or view our Facebook page at https://www.facebook.com/VistaGen.

Cautionary Statement Regarding Forward Looking Statements
The statements in this press release that are not historical facts may constitute forward-looking statements that are based on current expectations and are subject to risks and uncertainties that could cause actual future results to differ materially from those expressed or implied by such statements. Those risks and uncertainties include, but are not limited to, risks related to regulatory approvals and the success of VistaGen's ongoing clinical studies, including the safety and efficacy of its drug candidate, AV-101, the failure of future drug rescue and pilot preclinical cell therapy programs related to VistaGen's stem cell technology-based Human Clinical Trial in a Test Tube™ platform, its ability to enter into drug rescue collaborations, risks and uncertainties relating to the availability of substantial additional capital to support VistaGen's research, development and commercialization

activities, and the success of its research, development, regulatory approval, marketing and distribution plans and strategies, including those plans and strategies related to AV-101 and any drug rescue variants identified and developed by VistaGen. These and other risks and uncertainties are identified and described in more detail in VistaGen's filings with the Securities and Exchange Commission (SEC). These filings are available on the SEC's website at www.sec.gov. VistaGen undertakes no obligation to publicly update or revise any forward-looking statements.

For More Information:

H. Ralph Snodgrass, Ph.D.
President and Chief Scientific Officer
VistaGen Therapeutics, Inc.
650-244-9990 x222
investor.relations@vistagen.com

Mission Investor Relations
Atlanta, Georgia
http://www.MissionIR.com
404-941-8975
Investors@MissionIR.com

Source: VistaGen Therapeutics, Inc.

Released October 25, 2011