



## VistaGen Therapeutics Receives Notice of Allowance of U.S. Patent for Treatment of Osteoarthritis and Joint Injuries with Stem Cell-Derived Chondrocytes and Cartilage

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SOUTH SAN FRANCISCO, Calif., May 23, 2018 (GLOBE NEWSWIRE) -- [VistaGen Therapeutics, Inc.](#) (NASDAQ:VTGN), a clinical-stage biopharmaceutical company developing new generation medicines for depression and other central nervous system (CNS) disorders, and its wholly-owned stem cell technology-focused subsidiary, VistaStem Therapeutics, Inc., today announced that the U.S. Patent and Trademark Office (USPTO) has provided VistaGen with a Notice of Allowance for [U.S. Patent Application No. 14/782,070](#) related to methods of producing pluripotent stem cell-derived chondrocytes, chondrocyte lineage cells, cartilage-like tissue and cartilage. Additionally, the USPTO allowed claims to the therapeutic administration of these cells and tissues to treat osteoarthritis and joint injuries affecting cartilage.

Osteoarthritis (OA) is the most common chronic condition of the joints, generally caused by aging, injury, overuse or obesity. OA affects approximately 27 million adults in the U.S. alone. Chondrocyte and cartilage replacement represent potential new therapies for treatment of OA and a broad range of degenerative and debilitating diseases that could dramatically reduce the need for mechanical devices.

"OA and joint injury are major markets with high unmet need," stated Shawn Singh, Chief Executive Officer of VistaGen. "This Notice of Allowance marks yet another forthcoming U.S. patent grant by the USPTO protecting our stem cell technology. This expected new U.S. patent relating to potential treatment of OA and joint injury and the [U.S. patent we received last December](#) relating to blood cells, platelets and bone marrow stem cells with potential to treat autoimmune disorders and cancer, enhance our ability, alone or with strategic partners, to develop and commercialize next generation health care products to address a wide variety of medical needs beyond the stem cell technology for treatment of heart disease that we licensed to [BlueRock Therapeutics](#) in December 2016."

[Dr. Gordon Keller](#), Director of the [McEwen Centre for Regenerative Medicine](#), one of the world's leading centers for stem cell and regenerative medicine research and part of the [University Health Network](#) (UHN) in Toronto, discovered the stem cell technology covered by this new U.S. patent. VistaGen holds an exclusive license to this patent from UHN.

### About Osteoarthritis<sup>1</sup>

Sometimes called degenerative joint disease or degenerative arthritis, osteoarthritis (OA) is the most common chronic condition of the joints, affecting approximately 27 million people in the U.S. alone. OA can affect any joint, but it occurs most often in knees, hips, lower back and neck, small joints of the fingers and the bases of the thumb and big toe. In normal joints, a firm, slippery material called cartilage covers the end of each bone. Cartilage provides a smooth, gliding surface for joint motion and acts as a frictionless surface between the bones. In patients suffering from OA, the cartilage breaks down and becomes rough, resulting in bone-on-bone friction causing pain, swelling and problems moving the joint. In the final stages of OA, the cartilage wears away and bone rubs against bone leading to joint damage, deformation, and increased levels of pain.

### About VistaGen

VistaGen Therapeutics, Inc. (NASDAQ:VTGN) is a clinical-stage biopharmaceutical company developing new generation medicines for depression and other CNS diseases and disorders with high unmet need. VistaGen's lead CNS product candidate, AV-101, is an oral N-methyl-D-aspartate receptor glycine B (NMDAR GlyB) antagonist in Phase 2 clinical development in the United States, initially as a new adjunctive treatment of Major Depressive Disorder in patients with an inadequate response to standard FDA-approved antidepressants.

### About VistaStem

[VistaStem Therapeutics](#) is VistaGen's wholly-owned subsidiary focused on applying human pluripotent stem cell (hPSC) technology to develop and commercialize proprietary new chemical entities (NCEs) for VistaGen's CNS pipeline and out-licensing, as well as cellular and regenerative therapies for a range of diseases and disorders involving blood and bone marrow cells, chondrocytes and cartilage, and heart and liver cells, including autoimmune disorders, cancer, heart and liver disease, osteoarthritis and joint injury.

<sup>1</sup>Arthritis Foundation website, 2017; Available at: <https://www.arthritis.org/about-arthritis/types/osteoarthritis/what-is-osteoarthritis.php>

For more information, please visit [www.vistagen.com](http://www.vistagen.com) and connect with VistaGen on [Twitter](#), [LinkedIn](#) and [Facebook](#).

### Forward-Looking Statements

This release contains various statements concerning VistaGen's future expectations, plans and prospects, including without limitation, our expectations regarding potential future strategic collaborations involving our stem cell technology and our intellectual property and commercial protection of our product candidates. These statements constitute forward-looking statements for the purposes of the safe harbor provisions under the Private Securities Litigation Reform Act of 1995. These forward-looking statements are neither promises nor guarantees of future performance and are subject to a variety of risks and uncertainties, many of which are beyond our control and may cause actual results to differ materially from those contemplated in these forward-looking statements. Among these risks is the possibility that (i) we may encounter unexpected adverse events that cause us to discontinue further development of our stem cell technology for therapeutic applications, including osteoarthritis and/or joint injuries, (ii) we may not have access to or be able to secure substantial additional capital to support our operations, including further research and development of VistaStem's stem cell technology for cellular therapy or regenerative medicine applications described in this release; and (iii) we, or a potential future collaborator, may encounter technical and other unexpected hurdles in the production of chondrocytes, chondrocyte lineage cells, cartilage and

cartilage like tissue for research and development and/or cellular therapy or regenerative medicine applications. Certain other risks are more fully discussed in the section entitled "Risk Factors" in our most recent annual report on Form 10-K, and subsequent quarterly reports on Form 10-Q, as well as discussions of potential risks, uncertainties, and other important factors in our other filings with the Securities and Exchange Commission (SEC). Our SEC filings are available on the SEC's website at [www.sec.gov](http://www.sec.gov). In addition, any forward-looking statements represent our views only as of the issuance of this release and should not be relied upon as representing our views as of any subsequent date. We explicitly disclaim any obligation to update any forward-looking statements.

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