



# VistaGen

## News Release

Study Published in Scientific Journal *Nature Biotechnology*

### **VistaGen and Leading Stem Cell Researchers Pinpoint Key Biochemical Pathways Involved in Generating Large Numbers of Heart Cells from Embryonic Stem Cells**

SOUTH SAN FRANCISCO, CA (Oct. 15, 2008) — Researchers from VistaGen Therapeutics, together with Dr. Gordon Keller and his team of scientists from Toronto's McEwen Centre for Regenerative Medicine and the Mount Sinai School of Medicine, have successfully identified key biochemical pathways involved in directing embryonic stem (ES) cells to become heart cells.

The research was published recently in the online edition of the scientific journal *Nature Biotechnology*, in a paper entitled "*Notch signaling re-specifies the hemangioblast to a cardiac fate.*"

Dr. Ralph Snodgrass, VistaGen's CEO, said, "The objective of this study was to better understand the development of heart cells, and improve approaches to direct ES cells to become heart cells. The published paper shows that by coordinating the signaling of certain molecular pathways we can produce large numbers of functional, highly pure, heart cells for improved drug safety screening and development."

Along with VistaGen scientists, the research team was headed by Dr. Gordon Keller, Director of the McEwen Centre for Regenerative Medicine, an important component of Toronto's University Health Network (UHN). Dr. Vincent Chen, currently at the Black Family Stem Cell Institute at New York's Mount Sinai School of Medicine, a postdoctoral fellow in Dr. Keller's group, was the lead author in the study. VistaGen has collaborated with Dr. Keller, one of the world's leading stem cell scientists, on research projects for more than 10 years. In March, 2008, VistaGen announced an expansive new ES cell research alliance with Dr. Keller, UHN and the McEwen Centre.

#### **About VistaGen Therapeutics**

VistaGen Therapeutics enables the pharmaceutical industry to transform its preclinical development approaches through the company's human ES cell systems biology platform, which can dramatically improve R&D productivity, reduce clinical development failures, and lower drug development costs. Through its "*Clinical Trials in a Test Tube™*" approach, VistaGen's industry advantage is its ability to support early heart and liver safety screening, reduce opportunity cost of clinical failures and non-viable drug candidates, and expedite development of promising drug candidates.

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