

Sernova Company Overview

Founded: 2006, TSX(V) "SVA.V" ; www.sernova.com

Sernova Corp. is a Canadian-based medical device and combination product development company benefiting patients with chronic metabolic, neurological, and haematological diseases with a first product focus on diabetes partaking in the near-term \$8 billion cell therapy market.

Sernova, is developing products using a triple platform technology which is expected to revolutionize the therapeutic cell therapy market. The first is the **Cell Pouch System™**, a scalable device providing a natural "organ-like" environment for therapeutic cells such as insulin producing islets required by diabetics. The second involves the **Therapeutic Cells**, whether they are natural donor cells, stem cells or genetically modified cells and the third is **Sertolin™**, a cell-based technology providing an immune-privileged environment for donor cells, reducing or eliminating the need for anti-rejection drugs. Sernova's triple platform approach is designed to eventually make cell therapy a simple outpatient procedure that can be performed in virtually any hospital setting rather than highly capital intense specialized settings. Using a medical device and combination product strategy Sernova rapidly partakes in the projected \$8 billion cell therapy market which positions the company for significant growth and revenue upon commercialization of its "paradigm-shifting" technology.

Sernova's team is immediately focused on development of the Cell Pouch System™ for treatment of insulin-dependent diabetes which could benefit both Type-1 and approximately 28% of Type-2 patients who convert to Type-1 diabetes a total patient population of about 9m North Americans and also has the rights to commercialize products for Parkinson's disease, spinal cord injury, and haemophilia among other debilitating diseases.

TECHNOLOGY HIGHLIGHTS

- **The Standard of Care** for patients with reduced or missing critical hormones or proteins such as insulin is often monitoring and injecting these proteins multiple times a day with a consequence of poor compliance and serious side effects resulting in \$150B/yr hospital costs for diabetes alone. Cell therapy is a new and increasing alternative for patients with severe disease; however, there is no currently approved device to house and protect these cells in the body and no method to make the therapy as a simple outpatient procedure available in virtually any hospital setting. Instead, often cells are injected multiple times into vessels in an extremely expensive (\$100,000) and risky procedure, where most cells die through blood-derived inflammation and clotting, resulting in the need for reoperations. Hence, the current standard of care for local cell therapy is limited by expensive procedures, poor cell survival and inappropriate delivery as well as lack of available donors.
- **Sernova's Cell Pouch System™** is a versatile, scalable, matchbook-sized, multi-chambered polymer device made of FDA approved materials, designed by biomedical engineers and biologists. Placed under the skin in a simple inexpensive procedure, it develops organ-like characteristics for delivery and natural housing of therapeutic cells. A natural environment is expected to conserve cell number, and promote natural function - increasing cell survival, while significantly increasing the number of treatable patients beyond those with severe disease.
- **Sernova's Therapeutic Cell** technologies involve the use of natural donor cells, genetically modified cells or cells derived from stem cells to replace cells in the body that no longer produce the therapeutic proteins.
- **Sernova's Sertolin™** is for patients who have had therapeutic cell therapy who want to avoid toxic and expensive anti-rejection drugs (\$10-15,000/yr). Sertolin™ is a patented cellular technology which when combined with therapeutic cells protects them from attack by the immune system. In fact animal models have shown that the combination of these protector and therapeutic cells leads to long-term graft functional survival.

Sernova Corp.

Stiller Centre, 700
Collip Circle, London
Ontario N6G 4X8,
Canada

President and CEO
Contact

Dr. Philip Toleikis

Tel: + 1 604-961-2939



FIRST THERAPEUTIC APPLICATION - DIABETES

The Cell Pouch System™ has shown long-term efficacy in small animal models, and has shown an excellent safety and long-term efficacy profile using the human designed product in a large animal model of diabetes. In fact, animals treated with the Cell Pouch™ with about 10% of the islets typically used in the Edmonton Protocol were able to be taken off daily insulin injections for over 70 days, the length of the study due to good glucose control. This study was being supported by a \$489,000 in-kind contribution from the National Research Council of Canada who has now awarded Sernova a second contribution of \$275,000 to study the islet-sparing effect of the Cell Pouch System™ in an allograft setting. With reduced cost of implantation, increased safety and improved efficacy relative to other cell therapy treatments, this therapy could reduce or eliminate the need for insulin injections in an ever increasing number of patients. The timeline to FDA approval of a medical device is shorter than pharmaceuticals with a much higher success rate. Using the device regulatory pathway, Sernova has the potential to have products on the market in a shorter period of time than competing pharmaceutical technologies. With appropriate funds and regulatory approval Sernova expects to evaluate the Cell Pouch System™ in patients in 2011.

ADDITIONAL PRODUCT OPPORTUNITIES/PARTNERING/M&A

Sernova plans to develop other indications using the Cell Pouch System™ including Parkinson's disease, Haemophilia, and spinal cord injury. The company will be seeking collaborators and corporate partners for these therapies. Sernova plans to in-license additional technologies related to cell therapy that is complementary to the Cell Pouch System™

THERAPEUTIC PRODUCT EXPANSION STRATEGY AT SERNOVA

Sernova's products are designed to allow for multiple market expansion opportunities within each therapeutic area. For example, the technology would be beneficial if it provided a simple reduction in the number of daily therapeutic injections a patient must take; however, there is the possibility that it could even essentially 'cure' the disease through natural release and regulation of the therapeutic proteins or hormones. The technology could be used for a patient's own cells (autograft), or a donor's cells (allograft) with anti-rejection drugs or Sertolin™ technology. Finally, genetically modified cells or stem cells would be applicable for the Cell Pouch System™. These options when used for the various proposed diseases create an enormous market opportunity for the company.

SERNOVA'S MANAGEMENT/BOARD/ADVISORY BOARD

Experienced team with successful product development and business experience

Management: President and CEO since May 2009 – Dr. Philip Toleikis: Former VP Pharmacology R&D, Angiotech Pharmaceuticals, where he was part of the team that developed the multi-billion dollar drug-eluting stent and other drug-eluting medical devices; CFO Bill Smethurst, CA; Delfina Siroen Director R&D with over 20 years experience in managing R&D teams.

Board of Directors: Chairman Dr. George Adams – CEO VentriPoint, Inc.; Dr. Annemarie Moseley – CEO REPAIR Technologies; Jeffery Bacha – CEO Delmar Pharmaceuticals, Inc.; Hans Mader – Previous CEO Novartis Canada, Procyon Biopharma, and Ambrilia Biopharma, Inc.; Dr. Philip Toleikis, President and CEO Sernova Corp.

Scientific/Medical Advisory Board: Dr. David White, Ph.D.; Dr. James Shapiro M.D., Ph.D.; Dr. David Sutherland, M.D., Ph.D.; Dr. Steven Paraskevas, M.D., Ph.D.; Dr. George King, M.D.; Dr. Norman Wong, M.D.; Dr. Jannette Dufour, Ph.D.; Dr. Clive Patience, Ph.D.; Dr. Shinichi Matsumoto, M.D., Ph.D.; **Business Advisory Board:** Stephen Nagler, Chairman TriState Vent. C/O Eaton & van Winkle. **Financing:** >\$3M 2009-2010 public markets and non-dilutive grants; Currently arranging financing to take the company through Clinical Trials.

Company Contact: Dr. Philip Toleikis – President & CEO; ptoleikis@gmail.com; Cell: 604-961-2939

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