Sernova Corp

Founded 2006, London Ontario; TSX(v); SVA.V

2012 Corporate Presentation

April 20, 2012

"The path to a natural cure"

Sernova Corp

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Presentation Overview

- Sernova's Value Proposition
- Patent Portfolio
- Cell Pouch™ Product Animation
- Pipeline Products
- Diabetes Clinical Indication
  - Preclinical safety and efficacy
  - Clinical study outline
  - Clinical development
- Milestones achieved
- 2012 Goals

Sernova's Value Proposition

Regenerative Medicine/Cell Therapy: Projected $8B market

Platform Technologies

- Medical Device - Cell Pouch™; Local immune protection -Sertolin™; Therapeutic cells
- Multiple Product Applications: Neurological, Blood diseases, Metabolic diseases (diabetes)

First Product Focus: Diabetes

- Patients with insulin dependent diabetes (9M NA; 34M China)
- Current Products: insulin injections, insulin pumps, islet injections
- Goal: Safe, effective tx beyond insulin injections with reduction of diabetes side effects

Cell Pouch™ /Sertolin™/Therapeutic Cells

Potential for significant improvement to efficiency, safety, efficacy, elimination of antirejection regimens for chronic diseases and disease side effects

Sernova's Proof

Cell Pouch™ Proven safe environment for cells: 4 animal models
Proven safety and efficacy: 3 diabetes transplantation models

Sertolin™
Local immune protection proven

Therapeutic Cells
Proven efficacy human cell transplantation for diabetes

Efficient Corporate Structure & Experienced Management Team

Core Executive Management

- ***President*** & ***CEO*** **- Dr. Philip Toleikis, BA., MSc., Ph.D.**

  President & CEO Sernova Corp since 2009; Pharmaceutical/Device Consultant, V.P. R&D Pharmacology, Angiotech (2006)

- ***Founding Scientist and Chair S.A.B.*** **- Dr. David White, PhD., M.R.C.P., F.R.C.P., *Professor Emeritus Medicine, Robarts Institute* , U. of Western Ontario**
- **Director R&D – Delfina Mazzuca-Siroen, BSc. Hon. Biochem., MSc.; 20 yrs. R&D Mgmt.**
- ***Finance CFO*** **– Bill Smethurst, CA**

Board of Directors

- **Dr. George Adams, MSc., Ph.D. (Chairman); CEO VentriPoint, Inc.**
- **Jeffrey Bacha, BSc., MBA; CEO Del Mar Pharmaceuticals**
- **James Parsons, CA ; CFO/advisory - DiaMedica, Stem Cell Therapeutics, Amorfix, Lorus Therapeutics, YM Biosciences, Astra Zeneca Canada**
- **Bruce Weber, B.S., MBA; VP Clinical/Regulatory and QA Innovia LLC.**
- **Dr. Philip Toleikis, BA., MSc., Ph.D.; President & CEO Sernova Corp.,**

Sernova's Patent Portfolio

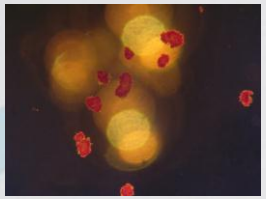
Over 20 issued and pending patents in 5 families:

- Composition and use of medical devices for delivery and cell transplantation
- Methods for predicting long-term therapeutic cell function
- Use of sertoli and genetically modified sertoli cells for treatment of disease
- Use of combinations of Sertoli cells and other cell types for treatment of disease
- *In vitro* co-culture of mammalian cells with sertoli cells

Sernova has a significant and growing patent portfolio

Sernova's Therapeutic Goals
A Best Practise-Based Approach

A Natural Cell Environment: Cell Pouch System™



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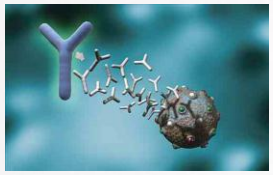


An Unlimited Source of Therapeutic Cells

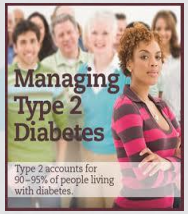
Safe Prevention of Transplant Rejection Sertolin™

The Cell Pouch™: Product Pipeline

Cell Pouch™

- **Diabetes**
  - **Type-1**

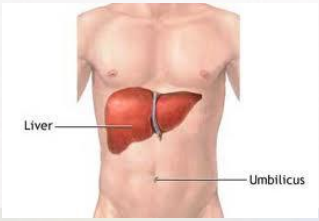
  - **Type-2**



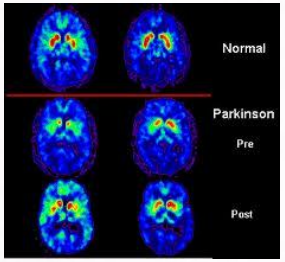
- **Parathyroid**

- **Haemophelia**

- **Liver Failure**



- **Parkinson's Disease**



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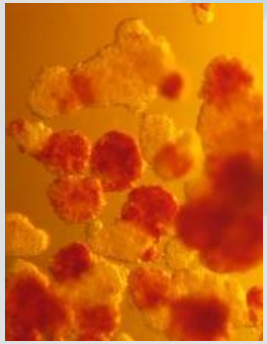
The Cell Pouch™ Product Pipeline

Cell Type Options

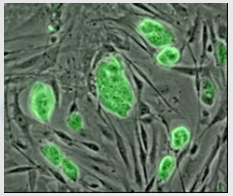
Expanding Treatable Patient Numbers

Cell Pouch™

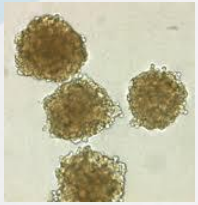
Human Donor Cells



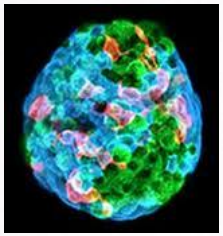
Stem Cells



Porcine Cells



Genetically Engineered Cells



Sernova's Cell Pouch™ First Clinical Indication

DIABETES

Diabetes: Sernova's Lead Indication

Islet Transplantation – Islets read blood glucose levels and release insulin to control blood glucose levels

Why?

Islet isolation is a standard procedure

There are currently no commercial products for controlling blood glucose levels naturally

Diabetes is an Unmet Medical Need of Epidemic Proportions

≈ 23.6m diabetics in USA*; 92m diabetics in China and growing

Diabetic complications

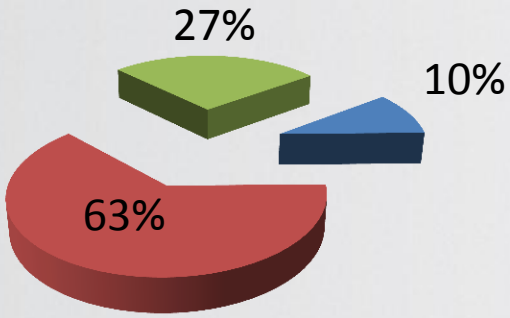
heart, kidney, nerve disease, amputations, blindness

N.A. health care cost >$150 billion/yr

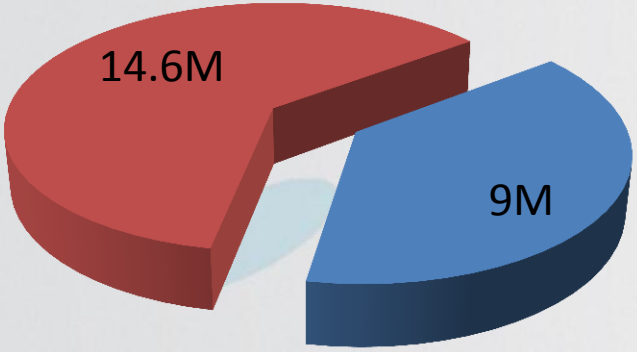
*American Diabetes Association, 2007,

Cell Pouch System™: Focus on Diabetes Patient Treatment

Diabetes Market



US Market
23.6M Patients

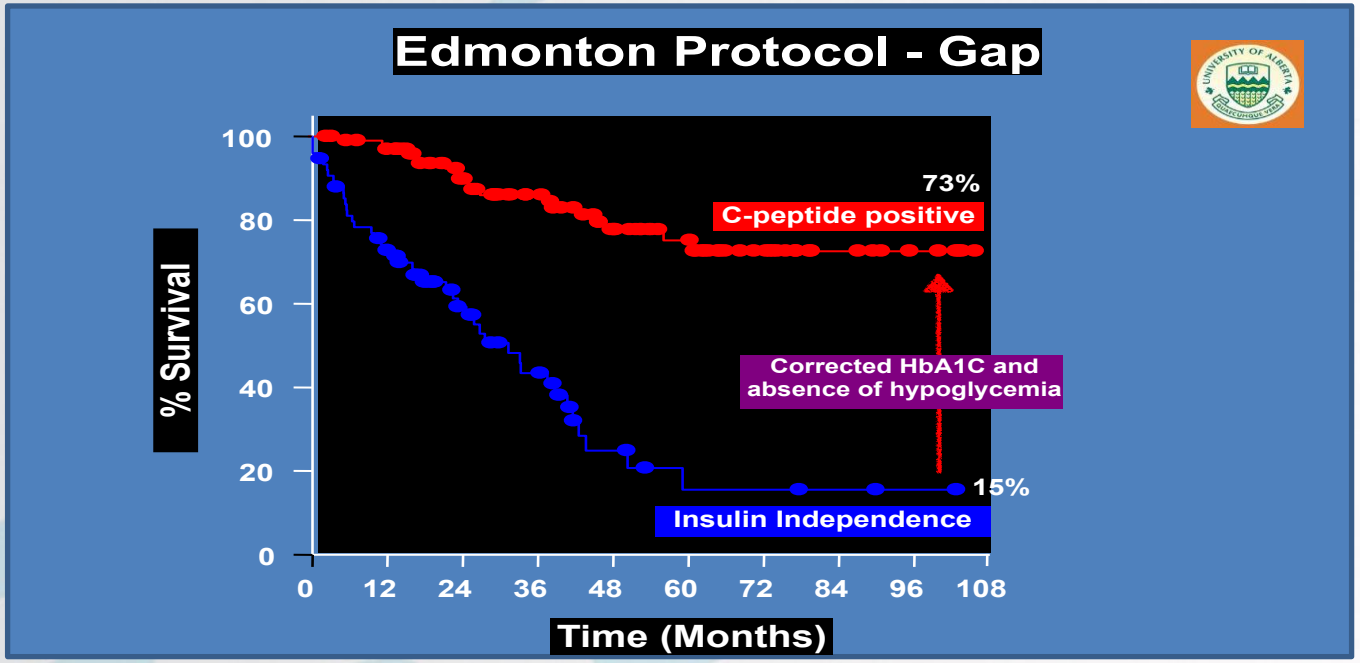


- Diabetes Epidemiology
  - Type 1 Insulin-dependent (about 10% of diabetics)
  - Type 2 Insulin-resistant (about 63% of diabetics)
  - Type 2 Insulin-dependent; (27% of Type-2 diabetics take insulin injections)

37% (9M US and 34 M Asia) currently on insulin therapy

The Edmonton Protocol Approach to Islet Transplantation Can Be Improved

A study of 36 patients using the Edmonton Protocol:
44% were insulin independent at 1 year
10% insulin independent at 5 years (Shapiro et al. NEJM 355:13, 2006)

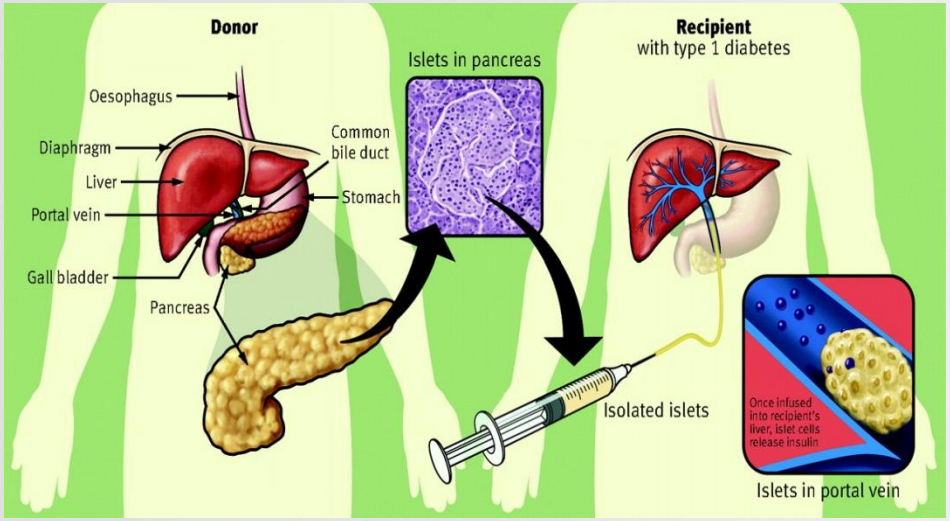


More recent studies with Alemtuzumab show improved results

A further improvement in safety and efficacy to the current standard of care for islet transplantation is required

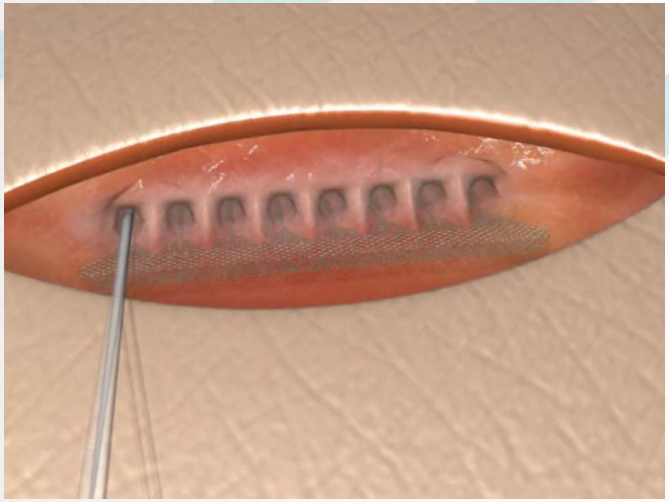
Improving the Standard of Care of Islet Transplantation

Edmonton Protocol



Catherization laboratory
Loss of 60-75% of islets immediately-IMBIR
Portal hypertension, thrombosis
No possible Islet imaging
Expensive procedure
Systemic antirejection drugs

Cell Pouch System™



Outpatient; minimally invasive
No IBMIR- Uses 10-25% of islets
No Portal hypertension or thrombosis,
Excellent blood supply to islets
Possible Islet imaging
Reduced cost
Possible local immune protection

Cell Pouch™ Preclinical Summary

Safety confirmed in 4 animal models
rodent, pig, non-human primate

Confirmed efficacy (insulin independence)
isograft, autograft ,allograft models of diabetes

Islet sparing (10-25% of islet standard of care)
autograft and allograft models

Confirmation of Cell Pouch™ biocompatibility (ISO10993)

These robust data support evaluation of the Cell Pouch™ in humans

Sernova Cell Pouch™ Clinical Development

F.I.M. Phase I/II Clinical Study: Initiation Anticipated Q2 2012

- Principal Investigator: Dr. A J Shapiro (KOL; Int. Consortium Leader in Islet Transplantation; Developer of Edmonton Protocol)
- University of Alberta, Canada
- GMP Islet Facility
- Health Canada Regulatory Classification: Medical device

- Preclinical package completed – no preclinical safety or efficacy risk
- All clinical and regulatory documentation completed
- Cell Pouch™ contract manufacturing completed (Moog Medical Devices)
- Cell Pouch™ clinical product released for clinical testing
- Documents filed with U. Alberta Ethics Board and Health Canada
- U. Alberta approved clinical study pending Health Canada Approval

Sernova Cell Pouch™ Clinical Development

Study Design

20 patients (unstable diabetes); open-label; single-arm; non-randomized

Islet transplantation 2-12 wks post Cell Pouch™ Implantation

Primary endpoint

Safety post Cell Pouch™ implantation and 1month post islet transplantation

Secondary endpoint

Efficacy, proportion of patients insulin independent at 3months post final islet transplant

Follow Up

Patient follow-up for 3 years to assess long-term safety and efficacy

Study allows for interim safety and efficacy data release

Comparison with standard of care Edmonton Protocol (Alemtuzumab)

Sernova Cell Pouch™ Clinical Development

Plan for international pivotal study (Canada, US, Europe, Asia) and market approval

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Next Generation Cell Pouch™ Products

Product	Development Strategy
Cell Pouch™ Improved Antirejection regimen	Shapiro Collaboration
Cell Pouch™ and local immune protection (Sertolin™)	Sernova Internal R&D Development
Cell Pouch™ (encapsulation)	Corporate Collaboration and Sernova R&D
Cell Pouch™ and insulin producing stem cells	Corporate Collaboration and Sernova R&D

Sernova Corp

Founded 2006 London, Ontario, Canada
Publicly Traded: Toronto Venture Exchange: SVA.V
New Management April, 2009
Funds Raised 2009-Present: $8.38M
Govt. Grants: $750k
Private Placements: $7.63

Dr. James Shapiro
University of Alberta
Principal Clinical Investigator

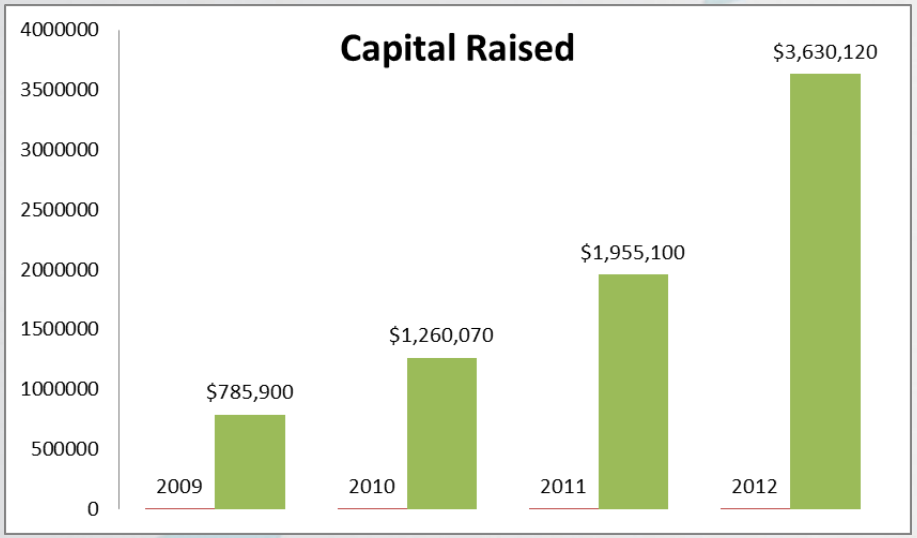
Academic Collaborations/Associations

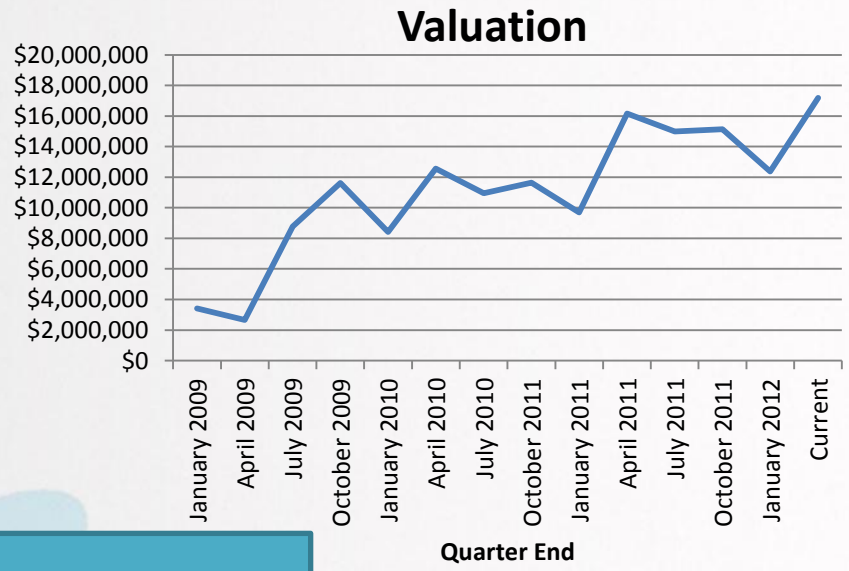
University of Western Ontario
University of Alberta
McGill University
University of Minnesota
University of Chicago, Illinois
University of Minnesota
University of Arizona

Dr. David White
University of W. Ontario
Chair: Scientific Advisory Board

Capital Efficiency vs. Company Valuation

April 2009 share price $0.03
April 2012 share price $0.17





Major Achievements

2009 New strategy; new management; patents; isograft study
2010 Human scaled Cell Pouch™; Autograft Proof of concept
2011 Allograft Proof of concept; prep for clinical study
2012 Manufacturing; Initiation of clinical study

Key Milestones Achieved

2009 Milestones Achieved

- Hired Management and R&D team; focused product development strategy on Cell Pouch™
- Prepared Sernova laboratory for preclinical studies
- Long term safety and efficacy of Cell Pouch™ in a small animal model of diabetes
- Developed and manufactured first human-scaled Cell Pouch™
- $465,000 NRC (IRAP) grant to conduct Autograft study of Cell Pouch™ in large animal model
- $786,000 private placements completed

2010 Milestones Achieved

- $275,000 NRC (IRAP) grant to conduct allograft study of Cell Pouch™ in large animal model
- Completion of non-human primate safety of Cell Pouch™
- Successful completion of large animal autograft model of Cell Pouch™
- Identification of Dr. James Shapiro as principal clinical investigator of Cell Pouch™
- $1.26M private placements completed

2011 Milestones Achieved

- Successful completion of allograft study in large animal model of diabetes
- ISO13485 Contract Manufacture of Cell Pouch™ for clinical evaluation
- Completion of biocompatibility studies of Cell Pouch™
- Completion of all preclinical reports and Investigator's Brochure
- Identification of Cell Pouch™ regulated as medical device by Health Canada
- Initiation of corporate and academic collaborations for Cell Pouch™
- $1.95M private placements completed

Key Milestones Achieved and Ongoing 2012 Objectives

2012 Milestones Achieved

- Completion of regulatory documents for the upcoming clinical study
- Filing of regulatory documents with University of Alberta HREB for F.I.M. clinical study
- Filing of regulatory documents with Health Canada to initiate F.I.M. clinical study
- Closing of non-brokered private placement $3.63M
- Approval by HREB to begin clinical study pending Health Canada clearance
- Granting of patent allowance in Japan
- Continued development of corporate and academic collaborations
- Completion of contract manufacture of Cell Pouch™ by Moog Medical Devices Group
- Release of Manufactured and sterilized Cell Pouch™ product for the clinical study

2012 Ongoing Objectives

- Clearance of ITA and CTA by Health Canada to begin clinical trial
- Initiation of patient enrolment by University of Alberta
- First patient treated with donor islets in the Cell Pouch™
- Early safety assessment of Cell Pouch™
- Possible early efficacy assessment of Cell Pouch™
- Further development of corporate collaborations involving Cell Pouch™ with other technologies

Scientific/Clinical Advisory Board

Dr. David White Ph.D., M.R.C.Path, F.R.C.Path

World leading expert in transplantation, Professor Emeritus, U. Western Ontario

Dr. Steven Paraskevas, M.D., Ph.D.

Director islet transplantation and human islet isolation program, McGill University

Dr. James Shapiro, M.D., Ph.D. FRCS (ENG.)

Director of the Clinical Islet Transplantation Program at the University of Alberta

Dr. David Sutherland, M.D., Ph.D

Director of the Schulze Diabetes Institute Univ. of Minnesota

Dr. George King, M.D.

Director of Research at Harvard Medical School's Joslin Centre for Diabetes Research

Dr. Norman Wong, M.D., F.R.C.P.

Co-founder of Resverlogix (TSX:RVX) and respected clinical endocrinologist

Dr. Jannette Dufour, Ph.D.

Former researcher with "Edmonton Protocol" group and world leading expert in Sertoli technology

Dr. Clive Patience, Ph.D.

Director of Bioanalytical Quality Control at Biogen Idec. Inc (NASDAQ:BIIB), expert in biological safety and transplantation

Sernova Highlights

Regenerative Medicine/Cell Therapy

Sernova participates in the projected $8B market for regenerative medicine/cell therapies using a unique medical device approach

Minimized Technology Risk

Cell Pouch™ forms an ideal environment for therapeutic cells in 4 animal models; Safety and efficacy proven in 3 diabetes models.

Clinical islet transplantation is well-established; the Cell Pouch™ may provide significant improvement to efficiency, safety and efficacy. Sertolin™ could eliminate the need for antirejection drugs.

Platform Technology Advantage

Cell Pouch™ and Sertolin™ as platform technologies may be used for multiple clinical applications

Management/Clinical Advisory Teams

Management track record of creating value for shareholders; Clinical advisory team is world renowned in the islet transplantation field; Principal clinical investigator is the developer of the Edmonton Protocol

Valuation Drivers

Sernova is transitioning to a clinical development company, is planning for multiple collaborations to expand its technology and is focused on partnering

Contact Information

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