Stem Cell Network | Réseau de Cellules Souches

Powering Regenerative Medicine
Propulsons la médecine régénératrice

QUEBEC
BY THE NUMBERS

SCN REGIONAL PROFILE

For nearly 25 years, SCN has led the way in building national capacity in stem cell and regenerative medicine by supporting world-class research and empowering leading researchers and trainees from coast to coast.

Stem cell and regenerative medicine researchers in **Quebec** are making important advancements in areas such as burns, muscular dystrophy, ocular disease, cancer and other diseases such as Parkinson's and Epidermolysis Bullosa.

FUNDS INVESTED IN QC RESEARCH

$20,968,127

41 TOTAL PROJECTS FUNDED

11 CLINICAL TRIALS FUNDED

55 INVESTIGATORS SUPPORTED

11 INSTITUTIONS SUPPORTED

MATCHING FUNDS FROM PARTNERS

$22,911,268

480 QC TRAINEES SUPPORTED

Data from 2016 onward

SCN RESEARCHERS ARE WORKING ON:

- BLOOD CANCERS such as Leukemia and Myeloma
- BURNS
- MUSCULAR DYSTROPHY
- RARE DISEASE such as Epidermolysis Bullosa
- OCULAR DISEASES

WATCH US IN ACTION

STEMCELLNETWORK.CA

TRANSFORMING THE TREATMENT OF LIVER DISEASE:

MORPHOCELL TECHNOLOGIES

Based in Greater Montreal, Morphocell Technologies is a preclinical regenerative medicine company focused on liver disease, borne out of game-changing research originally funded by the Stem Cell Network. Liver disease affects one in four Canadians, costing the healthcare system an average of $39 million annually.

In 2016, **Drs. Massimiliano Paganelli** and **Claudia Raggi** of the Centre hospitalier universitaire (CHU) Sainte-Justine set out to find an alternative solution for patients suffering from Acute Liver Failure (ALF). Patients with ALF often require a liver transplant within days of diagnosis to survive, and it is not always possible to find a donor. Those who do typically require a lifetime of immune-suppressant drugs. Using stem cells, Drs. Raggi and Paganelli created “mini livers” or liver organoids and combined them with a special biomaterial to generate an encapsulated liver tissue (ELT). This innovative product promised to provide liver function to patients with ALF, keeping them healthy while their own liver heals, or they wait for a transplant. It was a novel idea and SCN was excited to take a risk and invest nearly $200,000 in this initial research.

FOUNDED: 2018

OF EMPLOYEES: 39

LOCATION:
Montreal, Quebec

MOST RECENT INVESTMENT:
US $40 million in Series A financing

To date, the Network has invested $1.4 million in this high-quality research as it has the potential to provide not only new treatment options for those with ALF but those with chronic liver failure and other liver diseases. In 2018, this game-changing, stem cell-based technology was used to spin out Morphocell Technologies. After raising $8 million in seed investment, in February 2024, Morphocell secured US$40 million in Series A financing to advance its first therapeutic product, ReLiver®, a novel cell therapy platform that promises to transform the treatment of liver disease.

For more information, visit www.morphocell.com

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DELIVERING “FIT” BLOOD STEM CELL THERAPIES FOR HIGH-RISK CANCER PATIENTS:

EXCELLTHERA

Based in Montreal, ExCellThera Inc., is an advanced clinical-stage company and world leader in enhanced blood stem cell expansion, developing stem cell-based therapies to treat blood cancers and other diseases. The company was founded by SCN-funded scientists **Drs. Guy Sauvageau and Peter Zandstra.**

In June 2024, ExCellThera announced that their top product, UM171 Cell Therapy, received fast-track review by the European Medicines Agency (EMA) for adults with blood cancers who need a stem cell transplant but can’t find a suitable donor. To date, UM171 has been tested in 120 patients in clinical trials across the United States, Europe and Canada. It’s already received special designations from both the U.S. FDA and the EMA, recognizing it as a promising treatment and giving it priority status.

ExCellThera’s EnhanceTM technology, which includes UM171, helps grow and rejuvenate stem cells by counteracting the effects of cellular aging and stress observed in older/manipulated cells. This technology has the potential to revolutionize blood stem and progenitor cell-based therapies for the treatment of blood cancers and other diseases.

For more information, visit www.excellthera.com.

FOUNDED: 2015

OF EMPLOYEES: ~20

LOCATION:
Montreal, Quebec

MOST RECENT INVESTMENT:
undisclosed
(private company)

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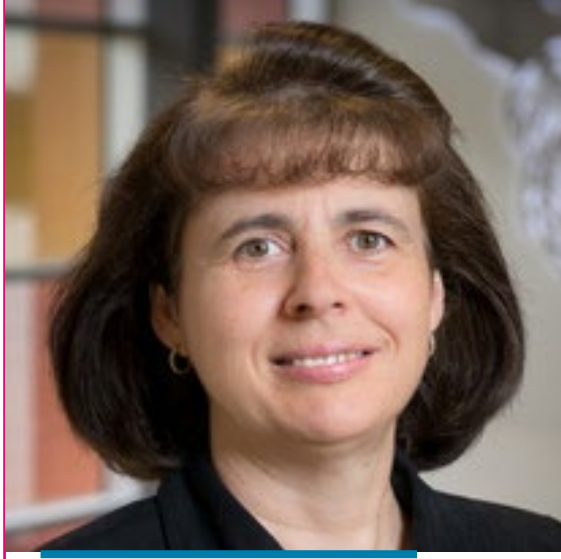
COMBINING GENE THERAPY AND TISSUE ENGINEERING TO TREAT RDEB,

A RARE SKIN DISORDER

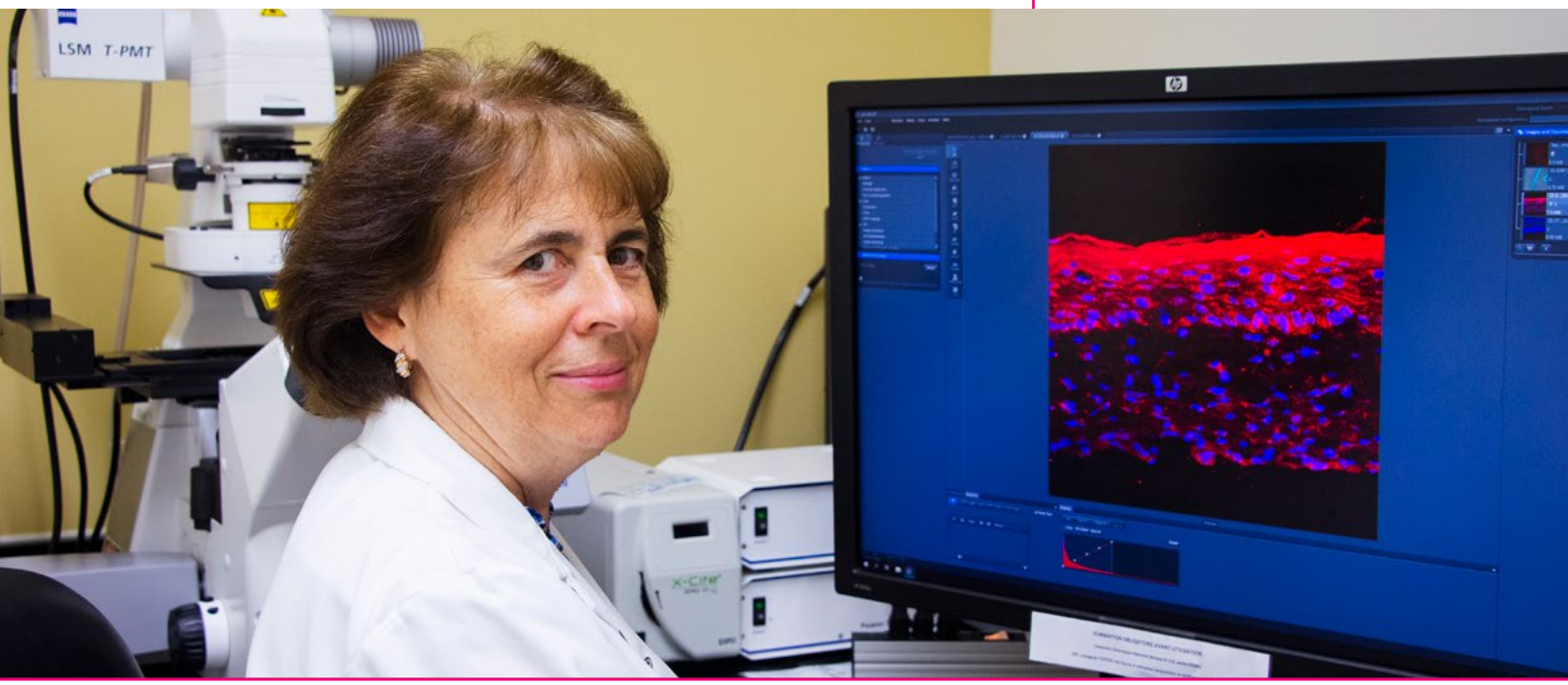


Recessive dystrophic epidermolysis bullosa (RDEB) is a rare but devastating genetic skin disorder affecting 300–500 Canadians. Caused by a lack of collagen VII—a critical protein that acts like a "glue" between skin layers—RDEB leads to fragile skin, chronic wounds, and in some cases, aggressive skin cancer, which is a major cause of death. Current treatments are palliative, involving costly and painful bandage changes that offer little long-term relief.

Dr. Lucie Germain's team is leading a groundbreaking Phase I/II clinical trial at CHU de Québec-Université Laval. Their approach combines gene therapy and tissue engineering to create permanent skin substitutes from a patient's own cells. These lab-grown skin grafts are genetically corrected to restore collagen VII production and are being tested as a durable, healing solution for RDEB wounds. If successful, this therapy could significantly improve the quality of life for RDEB patients while reducing the physical, emotional, and financial toll on families and the Canadian healthcare system.

"For people with RDEB, even the slightest friction can cause painful skin wounds that are very hard to heal. By combining gene therapy with tissue-engineered skin, we hope to offer a lasting solution — one that not only restores their skin but also their dignity and quality of life."

Dr. Lucie Germain
Professor, Université Laval



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