



Rosell Institute >
for Microbiome and Probiotics
by **LALLEMAND**



Leading Microbiome and Probiotics Research Forward

LALLEMAND HEALTH SOLUTIONS

LALLEMAND

Our Values Shine Through **Our Research and Development Commitment**

Our mission is to apply leading-edge technologies and innovative scientific approaches to the improvement of human health through understanding the interaction between people and their functional microbiome. Through intensive investigation and collaborative studies, the Rosell® Institute for Microbiome and Probiotics is focused on understanding the potential of the human microbiome and to remap its functionality using probiotic supplements to improve or maintain health in specific populations or health segments.



**Pre-clinical
platform**

**Clinical
platform**

**Bioprocess
and galenic
form
platform**

**Microbiome
platform**



Who We Are

Building on 90 years of expertise, Lallemand Health Solutions, one of the global leaders of the probiotics industry, specializes in the development, production, and marketing of bacteria- and yeast-based probiotic supplements for human health, food applications, nutricosmetics and contract development and manufacturing (CDMO). The company has a rich history of innovation and excellence, starting from 1934, when Dr. José-Maria Rosell, an eminent physician and bacteriologist founded the Rosell institute in Montreal, Canada. The institute was later further developed by Prof. Édouard Brochu and became internationally recognized for its probiotic strains. Ten years later, in 1998, Lallemand acquired the Rosell institute, and consolidated its research and development capabilities.



With its production facilities adhering to the highest quality standards, including Good Manufacturing Practices, and its ambitious research program Lallemand Health Solutions provides its partners with probiotic strains that are studied in various health applications.

- Three bacteria plants (Canada and France)
- One probiotic yeast plant (Austria)
- One pre-clinical and clinical research center (Canada)
- One bioprocess and galenic expertise center (France)

90+ years of know-how

600+ employees
including a team of 45+ in R&D

40+ proprietary strains

600+ formulas
distributed in 60+ countries

An Integrated Research Platform

Pre-clinical platform

Our *in vitro* research program is conducted in-house in the Montreal laboratories and is dedicated to strain identification and characterization, developing, and validating new analytical methods as well as to understanding host-microbe interactions and study microbiota modulation.

Promoting probiotic strain identification and characterization

Our *in vivo* research program is conducted either in-house using *C. elegans* model or in collaboration with external scientific partners to increase the knowledge of probiotic strains with regards to safety and mode of action, to select strains for upcoming human studies, and to help explain clinical trial results.

Understanding probiotic strains modes of action

100+ *in vitro*

80+ *in vivo*

Core areas of expertise

Strains screening and characterization

- Genetic-based characterization
- Metabolic-based profiling
- Physiology and biochemistry
- Safety-based characterization

Novel microbes and microbiome research

- Evolutive adaptation and new anaerobic microbes
- Genetic engineering
- Impact of external factors and probiotics on the microbiota

Host-microbe interactions

- Metabolomics
- Genomics
- Gene expression and protein markers quantification
- Bioinformatics

Clinical platform

Collaborating with dedicated experts in clinical research, the Rosell® Institute participates in studies initiated by sponsors, clients, or investigators on Lallemand Health Solutions' single or combined probiotic strains.

We are one of the few players in the industry whose R&D department houses a fully integrated clinical team

composed of highly qualified individuals from diverse backgrounds, all deeply passionate about microbiome and probiotics research.

We strive for excellence in clinical research

actively participating in recognized professional associations (SOCRA, ACRP, AQIIRC). We receive training on essential aspects of clinical research, fostering innovation in our endeavors.

Our probiotics have been studied in **160+ clinical trials**, covering areas such as:



GUT
HEALTH



NATURAL
DEFENSES



MENTAL
HEALTH



WOMEN'S
HEALTH



SKIN
HEALTH



ORAL
HEALTH



SPORT



METABOLIC
HEALTH



BABIES



We are currently conducting

25+ clinical trials

across

11+ countries

with

2,750+
enrolled participants

analyzing

2,500+
biological samples

Bioprocess and galenic forms platform

By optimizing probiotic production process, the bioprocess and galenic forms research teams ensures that the Rosell® Institute' science translates into convenient and attractive finished good formats for consumers around the world. Our applied research center focuses on optimizing our production processes, applying a 4-level protection program, increasing strain stability, and developing innovative delivery forms.

Bioprocess optimization



Applied research facility focuses on:

- Optimizing production processes
- Applying a 4-level protection program
- Increasing strain stability
- Developing innovative delivery forms

Microbiome lab focuses on:

- Paving the way to next generation probiotics
- Developing fermentation capabilities and dosage forms

How probiotics are produced

See it with your own eyes in this virtual tour.



Microbiome program

Our Microbiome lab focuses on paving the way for next-generation probiotics and developing fermentation capabilities and dosage forms. Our dedicated team develops cultivation capabilities for microbiome-based strains that are identified as key next-generation species. We have achieved the certification of our French plant in Saint-Simon, for production of live biotherapeutics as a contract development and manufacturing company and have a worldwide presence in recognized organizations in the field of microbiome research.

Lallemand Health Solutions collaborates actively with leading research institutions, universities, and industry experts. By fostering partnerships, sharing knowledge, and participating in groundbreaking studies, Lallemand remains at the forefront of microbiome research. Given that at least 70% of human gut microbiome species remain uncharacterized, participation in initiatives aimed at better understanding the gut microbiome is crucial.

Lallemand Health Solutions has solidified its position in the microbiome field by actively engaging in scientific and regulatory discussions. The company holds key positions in renowned associations.

Worldwide presence in recognized organizations such as:

- Vice-presidency of the European Microbiome Innovation for Health (formerly known as Alliance Promotion Microbiome-APM)
- Industrial board member of the Human Microbiome Action
- Active industrial member of the French Gut Project
- Board member of Grand Défi Ferment du Futur
- Founding and board member of Pharmabiotic Research Institute
- A dozen of food / supplements associations with active leadership

Next-generation probiotics and live biotherapeutics

Ongoing research is venturing into a new frontier known as next-generation probiotics (NGPs) and live biotherapeutics. Advances in microbiome understanding have led to the identification of beneficial commensal bacteria, some of which correlate positively with human health. Recent regulatory approvals pave the way for NGPs as potential drugs to enhance well-being across various health applications. However, producing NGPs poses challenges due to their unique metabolism, oxygen sensitivity, and susceptibility to mechanical stressors. Lallemand Health Solutions is at the forefront of NGP development.

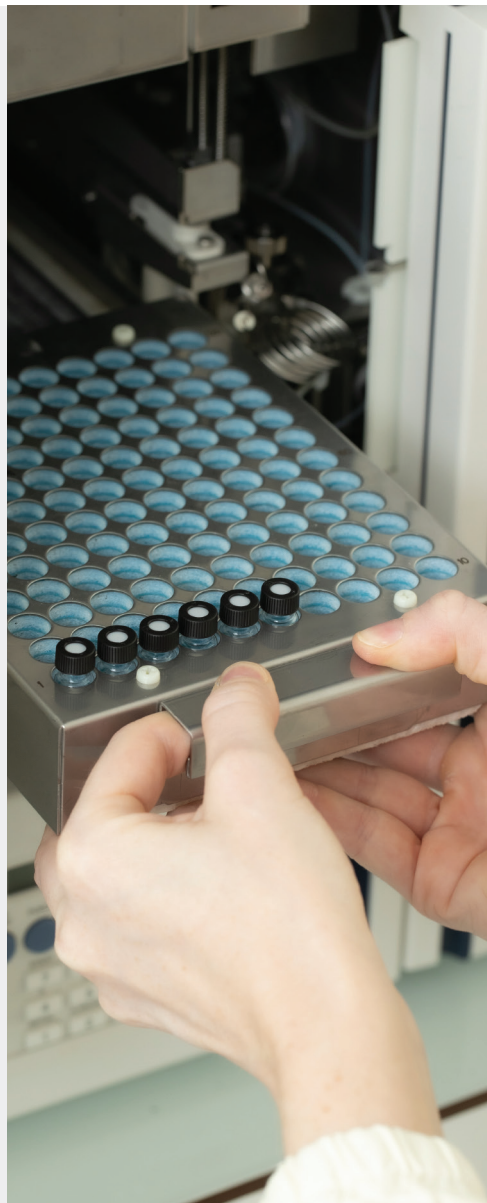
Collective Efforts Lead to **Successful Outcomes**

The Rosell® Institute works with key opinion leaders and develop partnerships with universities, hospitals, and research centers, hence supporting collaborative research, student internship programs and visiting scientists (sabbaticals, post-doctoral fellowships, etc.).

Worldwide, scientific partnerships convert into supporting clinical trials by contributing to study design, supply of probiotics and placebo at no cost, samples analysis, and funding.

We extend our gratitude to all our collaborators and participants committed for advancing research.

430+
publications to date



**“We firmly believe that innovative health solutions
can be identified and implemented strategically
through cooperation and creative thinking.”**

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