



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

# Scientific Cooperation Spells Success



# Our Values Shine Through Our Research and Development Commitment

The Rosell® Institute for Microbiome and Probiotics by Lallemand, is Lallemand Health Solutions' research center, whose 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 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, including gut health, immune health, mental health, women's health, skin health, oral health, metabolic health and sport.

The Rosell® Institute pre-clinical and clinical platforms are located at the National Research Council of Canada (CNRC) in Montreal, and the bioprocess and galenic forms platforms are based in Toulouse area, France.

## An integrated research platform

**Pre-clinical**  
platform

**Clinical**  
platform

**Bioprocess and  
galenic forms**  
platforms

## About Lallemand Health Solutions - A unique global probiotic leader vertically integrated from lab to shelf

Since 1934, with the creation of the Rosell® Institute by Dr. José-Maria Rosell, which was further developed by Dr. Edouard Brochu, Lallemand Health Solutions has been a vertically integrated probiotics manufacturer specializing in the research, development and manufacturing of probiotic formulations produced in the highest quality certified state-of-the-art facilities. Over 600 probiotic formulas are currently marketed in over 60 countries on five continents.



Lallemand Health Solutions has an established history and is a global leader in microbial fermentation using yeast and bacteria



Lallemand Health Solutions most recent 11 000 square meter cutting-edge plant in Mirabel, Canada

### Lallemand Health Solutions production locations:

- > Two probiotic bacteria plants in Canada and one in France
- > One probiotic yeast plant in Austria

>40+

proprietary  
probiotic  
strains

>85+

years of  
know-how

> 350+  
publications

> 100+  
*in vitro*

> 80+  
*in vivo*

> 160+  
clinical trials

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# An integrated research platform

## Pre-clinical platform

### *In vitro* and *in vivo* research programs

Lallemand Health Solutions *in vitro* research program is conducted in-house in the Montreal laboratories. The research team is dedicated to strains identification and characterization, developing, and validating new analytical methods as well as in understanding host-microbes' interactions and studying microbiota modulation.

Promoting  
probiotic strain  
identification and  
characterization

Understanding  
probiotic strains  
modes of action

Lallemand Health Solutions *in vivo* research program is conducted either in-house (e.g. *C. elegans* model) or in close relationship with external scientific partners. It aims to increase probiotic strains knowledge with regards to safety and modes of action, to select strains for upcoming human studies and to illustrate clinical trials results.

## Core areas of expertise

### Strains screening and characterization

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

### Host-microbe interactions

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

### Novel microbes and microbiome research

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

## Clinical platform

Collaborating with dedicated experts in clinical research, the Rosell® Institute participates in sponsor-initiated, client-initiated, and investigator-initiated studies on Lallemand Health Solutions' single or combined probiotic strains.

GUT HEALTH	IMMUNE HEALTH	MENTAL HEALTH	WOMEN'S HEALTH	ORAL HEALTH	METABOLIC HEALTH	SPORT
33	9	27	6	1	7	5
101	34	7	11	11	9	5
<ul style="list-style-type: none"> <li>• Acute diarrhea in children &amp; adults</li> <li>• Antibiotic-associated diarrhea</li> <li>• Irritable Bowel Syndrome</li> <li>• C. difficile and H. pylori infections</li> <li>• Lactose intolerance</li> </ul>	<ul style="list-style-type: none"> <li>• Upper respiratory tract infections in active people</li> <li>• Winter infections in children</li> <li>• Atopic dermatitis</li> <li>• Maturation of the immune system in young children</li> </ul>	<ul style="list-style-type: none"> <li>• Stress in active people</li> <li>• Gastrointestinal symptoms related to stress</li> <li>• Major depression</li> <li>• Sleep</li> </ul>	<ul style="list-style-type: none"> <li>• Vulvovaginal Candidiasis</li> <li>• Bacterial vaginosis</li> <li>• Candidiasis</li> <li>• Pregnant women and their baby</li> </ul>	<ul style="list-style-type: none"> <li>• Gingivitis</li> <li>• Tooth decay</li> <li>• S. mutans count for teeth health</li> <li>• Oral candidiasis</li> </ul>	<ul style="list-style-type: none"> <li>• Cholesterol</li> <li>• Liver health</li> <li>• Weight management efforts</li> </ul>	<ul style="list-style-type: none"> <li>• Upper respiratory tract infection in athletes</li> </ul>

● In Vivo ● Clinical Study

➤ The Rosell® Institute has been a pioneer in microbiome-gut-brain axis studies and remain focused on the scientific, preclinical, and clinical documentation of probiotic formulations to benefit mental health. ➤

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## Bioprocess and galenic forms platforms

By optimizing probiotic production process, the bioprocess and galenic forms research teams ensures that the Rosell® Institute's science translates into convenient and attractive finished good formats for consumers around the world.



## Bioprocess optimization

## Galenic forms



### Applied research facility focuses on:

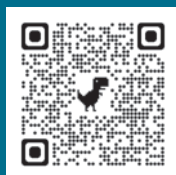
- Optimizing production processes
- Applying a 4-level protection program
- Increasing strain stability
- Developing innovative delivery forms

### 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.





# When Scientific Cooperation Spells Success

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.

## The Rosell® Institute's Microbiome Program – Key Facts

- Initiated two years ago
- Started the development of cultivation capabilities in microbiome-based strains identified as key next generation species.
- Achieved the plant certification (St-Simon, France) for production of live biotherapeutics as contract development and manufacturing company
- Developed licensing options and partnerships for specific strains development and documentation
- Joined the Alliance Promotion Microbiote in 2021



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## Contact us

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

