

Research Centre of the Institut Universitaire de cardiologie et de pneumologie de Québec – Université Laval



Created in 1918, the Institut universitaire de cardiologie et de pneumologie de Québec – Université Laval (Institute) is the only hospital in Canada to offer, in a single location, specialized and ultraspecialized care and services in cardiology, respirology and obesity surgery.

With over 20,000 m² of laboratory space dedicated to basic and clinical research, the Research Centre of the Institute enables research teams to conduct innovative and effective research in the prevention and treatment of cardiovascular and pulmonary diseases, as well as those related to obesity, type 2 diabetes, and metabolism.

Microbiota Platform **Institut universitaire de cardiologie et de** **pneumologie de Québec – Université Laval**

2725, chemin Sainte-Foy
Québec (Québec) G1V 4G5, Canada
✉ animalerie@criucpq.ulaval.ca
📍 iucpq.qc.ca/fr/recherche



Microbiota Platform

Information Guide



Microbiota Platform

CRIUCPQ-ULaval

iucpq.qc.ca/en/research/platforms/microbiota



CENTRE DE RECHERCHE
INSTITUT UNIVERSITAIRE
DE CARDIOLOGIE
ET DE PNEUMOLOGIE
DE QUÉBEC
UNIVERSITÉ LAVAL

Equipment and Services

Infrastructure and Equipment

- Controlled access area
- Hydrogen peroxide vapour decontamination room (to sterilize all the equipment passing through the controlled area)
- High-capacity loading sterilizer with sterilization cycles specifically developed for the stringent requirements of the axenic environment
- Four housing rooms for a total capacity of over 300 cages
- Biosecurity cabinet in every housing room, preserving the sterile environment
- Immersion tanks attached to biosecurity cabinets for chemical surface sterilization of work material
- Housing in cages with individual positive pressure and HEPA filtration (ISOcages P)

Technical Services

- Axenic and gnotobiotic animal housing
- Animal health status tailored quality assurance program
- Basic techniques (including weighing, biological sample collection, various ROA, food intake, etc.)
- Sterilization protocol development for new equipment and specific material
- Development and adaptation of specialized techniques in axenic conditions

Quality Assurance Program

Rigorous Sterility Validation Protocol for Items in Contact with Animals

- Use of biological indicators in every sterilization batch for all housing equipment (including cages, bedding, food, and nesting material), along with the systematic collection of samples for sterility validation
- Use of biological indicators during hydrogen peroxide fumigation cycles following each use of the biosecurity cabinets
- Development of hydrogen peroxide fumigation disinfection protocols

Animal Health Status Validation

Animal health status is validated through the collection of faeces at specific time points:

- Upon arrival from external suppliers
- Prior to experimental protocol commencement
- At every regular cage changes
- Before euthanasia



Microscopy

Fast Detection



Cultures

BHI for 7 Days, 3

Conditions:

25 °C Aerobic

37 °C Aerobic

30 °C Anaerobic



Biomolecular Analysis

16S qPCR

References

Lebeuf M, Turgeon N, Faubert C, Robillard J, Paradis É, Duchaine C. **Managing the bacterial contamination risk in an axenic mice animal facility.** *Can J Microbiol.* 2021 Sep;67(9):657-666. doi: 10.1139/cjm-2020-0519. Epub 2021 Apr 12. PMID: 33844954

Lebeuf M, Turgeon N, Faubert C, Pleau A, Robillard J, Paradis É, Murette A, Duchaine C. **Contaminants and Where to Find Them: Microbiological Quality Control in Axenic Animal Facilities.** *Front Microbiol.* 2021 Aug 16;12:709399. doi: 10.3389/fmicb.2021.709399. PMID: 34484147; PMCID: PMC8415547