



Erik Joly
Core Facility Manager

Since 2013, the cellular physiology core facility has stood out for its expertise in biomarker analysis and quantitative imagery adapted to preclinical and clinical research.

Our team offers specialized services in the quantification of analytes—hormones, cytokines, etc.—thanks to ELISA, TR-FRET and AlphaLISA technologies. Our miniaturized protocols are developed for small sample volumes that are often necessary in preclinical studies.

Our services include high-definition morphometric imaging, allowing for detailed analysis of the size, distribution and frequency of cells, as well as quantifying cell masses by immunohistochemistry and high-definition scanning. We also offer phenotypic analysis of cells to study key processes such as apoptosis, proliferation and cell migration.

SERVICES

IMMUNOASSAYS AND BIOCHEMICAL ASSAYS FOR HUMAN AND RODENT SAMPLES

- Quantification of hormones, cytokines and peptides present in blood (plasma and serum) and in incubation
- Biochemical assays for human and rodent samples (miniaturized assays)
- Assay validation, including commercial ELISA assays

MORPHOMETRY AND QUANTIFICATION OF CELL MASSES

- Morphometry service (sizes, distribution) for adipocytes, islets of Langerhans and other cell types
- Quantification of the relative cell masses present in a tissue or cell proliferation (Ki-67) by immunohistochemistry

PHENOTYPIC ANALYSES

- Use of a high-throughput cell imager, the Revvity Operetta, for phenotypic analyses in microplates (96 or 384 wells)

RESEARCH IN ACTION

Our expertise in imaging and analysis has allowed us to help François Yu, CRCHUM researcher, and his team to generate images of spheroid cells and to quantify them with fluorescence. This collaborative project offers unique insights for life sciences research. For example, it allows for the rapid analysis of proliferation or apoptosis in cells, even inside the spheroids' 3D structures.

CELLULAR PHYSIOLOGY

HIGHLIGHTS

Core facility personnel participate in the innovation of testing through miniaturization for small sample volumes in preclinical studies and offer advanced phenotypic cell analysis (e.g. use of spheroids). They also develop custom assays in partnership with the industry (e.g. glucagon assay), thus meeting the specific needs of research teams.

Since 2013, our staff has:

-  carried out **over 90,000** tests
-  developed **nearly 25** new assays
-  contributed to **more than 25** publications

