CORE FACILITIES

RADIOCHEMISTRY AND CYCLOTRON

Vijay Gaja
Core Facility Manager

Our team specializes in producing radioactive isotopes and incorporating them into molecules to create radiotracers used in positron emission tomography (PET) medical imaging for diagnostic and monitoring diseases over time.

Our work significantly enhances the detection of diseases, treatment monitoring, and our understanding of the progression of conditions such as cancer, diabetes, neurodegenerative and cardiovascular diseases.

All clinical radiotracer production is conducted in a Good Manufacturing Practice (cGMP) environment. We use automated modules within shielded cells to safely handle radioactivity while protecting personnel from exposure. The facility currently features two laminar flow dispensing hot cells equipped with remote manipulators.

SERVICES

PRODUCTION OF RADIOTRACERS FOR CLINICAL STUDIES AND PRECLINICAL IMAGING

DEVELOPMENT OF NEW AND ESTABLISHED RADIOTRACERS

- Work done in collaboration with faculty researchers, graduate trainees and postdoctoral fellows.

QUALITY CONTROL TESTING

- Quantification of residual organic solvents using gas chromatography (GC)
- Evaluation of chemical purity of samples through liquid chromatography (HPLC)
- Endotoxin detection
- Filter integrity testing

TRAINING

- Radiation safety
- Working in controlled GMP environments (clean rooms) and utilizing aseptic techniques
- Quality control (release testing) for radiopharmaceuticals prepared for clinical use
- Developing and validating new analytical methods
- Developing, implementing, and managing standard operating procedures (SOPs)
- Aseptic handling of radiopharmaceutical
- Preparing dossiers for Clinical Trial Applications (CTA) for new radiopharmaceuticals

HIGHLIGHTS

Our core facility supports the clinical production of radiotracers, the development of novel and established tracers and their translation into clinical applications.

We routinely produce tracers in compliance with Good Manufacturing Practice standards: DCFPyl, Fluorocholine, Fluoropyridine-losartan, FTPP, FTHA, Ammonia, N-methyl-hydroxyfasudil.

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Our facility features an IBA 18/9 MeV cyclotron, a clean room (GMP laboratory), a storage room, a research laboratory, a quality control lab, and a shipping room.

RESEARCH IN ACTION

Our team regularly produces radiotracers for clinical research studies and supply them to the CHUM, as well as other hospitals in Quebec. We are currently developing Ga-68 labelled molecules for PET imaging studies. Additionally, a new 7T PET/MRI system will be integrated into our platform, which will enhance preclinical studies and facilitate the clinical translation of new radiotracers.

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Core Facilities
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