Introduction to EGAMI
Expert Group Antwerp Molecular Imaging

1. Multi-modal imaging platform
2. Composition of EGAMI
3. Expertise overview per partner
Multi-Modal Imaging
University of Antwerp

Electron microscopy
Immunohistochemistry
MRI volumetry
Optical imaging
MR spectroscopy
Autoradiography
FDG PET brain activation
Resting state fMRI
Multi-Modal Imaging
University of Antwerp

Expert Group Antwerp
Molecular Imaging
Cell Biology and Histology

Bio-Imaging Lab

Advanced Microscopy

MRI and optical in vivo imaging

Radiopharmacy

MICA

Radiotracer development

Molecular Imaging PET/SPECT/CT
Laboratory for Cell Biology and Histology

Confocal imaging
Live cell imaging
Electron microscopy
✓ Cryo EM tomography
✓ 3D visualizations
Laser capture dissection
Molecular Biology

Applications
✓ Central nervous system (Alzheimer)
✓ Enteric nervous system (lung, gut)
✓ Core facility
✓ Autophagy, oncology, infectious disease,...
Bio-Imaging Lab

Magnetic Resonance Imaging
- Anatomical imaging
- Functional MRI (fMRI, rsfMRI, ASL)
- Spectroscopy (MRS)

Optical imaging
- BLI (luciferase)
- FLI probes

Applications
- Neuro-degeneration (Alzheimer, Multiple Sclerosis)
- Neuro-regeneration (stem cells)
- Neuroplasticity (song birds)
- Core-facility
Molecular Imaging Center Antwerp (MICA)

Molecular Imaging
- PET/SPECT/CT (MRI co-registration)
- Dynamic kinetic modelling
- Metabolite profiling

Applications

Neuro-research
- Alzheimer Disease research
- Drug screening and receptor binding
- Transcranial Magnetic Stimulation (TMS)

Oncology
- Tumor heterogeneity
- Treatment evaluations / mechanism of action

Inflammation (collaborations)
- Colitis in mice, rheumathoid arthritis in mice
Radiopharmacy

PET/SPECT radiotracer portfolio

- $^{18}$F: FDG, FLT, FET, FMISO, AV45, PBR111, CP18
- $^{11}$C: Raclopride, PIB, ABP688
- $^{89}$Zr: Herceptin, mAbs, polymers
- $^{99m}$Tc: Duramycin, (multiple clinical SPECT tracers)
- $^{111}$In: uPA tracer, (clinical octreotide probe)
- $^{90}$Y: SIRS (selective internal radiation spheres, clinical only)
- $^{15}$O: Water (brain perfusion in clinical setting)

Applications (pre-clinical research)

- Metabolism ($^{18}$F-FDG)
- Amyloid imaging
- Receptor imaging (TSPO, mGlur5, D2)
- Enzym (activity) imaging (PDE7, uPA)
- Oncology (proliferation, hypoxia, cell death)
Access to disease models

Neuro research
- Alzheimer
- Multiple sclerosis
- Huntington
- Mild chronic stress model (depression)
- Schizophrenia (pharmacologically induced)
- Transcranial Magnetic Stimulation (rTMS)
- Epilepsy
- Primary hippocampal cultures
- Drug screening

Oncology
- Tumor models
  - Orthotopic breast cancer, orthotopic colorectal, neuro-endocrine subcutane xenografts
- Cell lines
  - SKBR3, JIMT-1, HCC1569 (breast); Colo205; H727, H209, QGP1

Inflammation
- Experimental IBD (TNBS, T-cell transfer,...)
- Schistozoma-induced chronic inflammation
- LPS-induced lung inflammation
Need more information?

Contact:
Pieter-Jan Guns, Phd, PharmD
Research and Innovation Manager for EGAMI
pieter-jan.guns@uantwerpen.be