

cmmi
excellence in preclinical imaging

CENTER FOR MICROSCOPY
AND MOLECULAR IMAGING

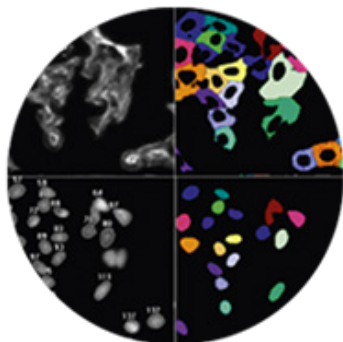
Preclinical imaging facility created by ULB and UMONS with the support of EU and Wallonia to provide R&D services for academic and industrial partners

WHAT WE OFFER



- › **DIAPath:** cell and tissue processing, tissue microarray production, automated staining, immunohistochemistry, chromogenic in situ hybridization (CISH), whole slide scanning, scoring by experts, quantification by image analysis and biomedical data analysis
- › **Microscopy:** electron microscopy (SEM, TEM including immuno-gold localization and soon cryo-TEM), (differential) digital holographic microscopy and fluorescence microscopy (laser-scanning and spinning disk confocal imaging, high-throughput microscopy, 3D reconstruction and live imaging)
- › **In vivo Imaging:** MRI (anatomical, functional, dynamic and molecular using contrast agents), optical imaging (bioluminescence/fluorescence), multispectral optoacoustic imaging (whole body imaging of endogenous and exogenous chromogens), high resolution X-ray tomography (μ CT), in vivo nuclear imaging (PET, SPECT), and ex vivo nuclear imaging (autoradiography and β and γ counting)
- › **Image processing:** development of ad-hoc image processing solutions (segmentation, counting, detection, cell tracking), process automation (high throughput), custom data analysis, image processing training

SOME APPLICATIONS



- › Validation of animal models, biomarkers, antibodies, contrast agents, radiotracers or companion diagnostics
- › Screening of drug target or protein expression
- › Tumor volume monitoring studies
- › Biodistribution of cell therapy products in vivo and ex vivo
- › Biomarker imaging in cancer, angiogenesis, apoptosis, atherosclerosis, inflammation, etc.
- › Analysis of biomaterials and nanoparticles
- › Customized image analysis

▶ ABOUT US

The CMMI has state-of-the-art equipment and offers a particularly large array of imaging technologies, which are structured around 4 poles (Microscopy, DIAPath, In vivo and Multimodal image processing). The team of the CMMI is multidisciplinary: academic supervisors as well as facility staff come from various horizons (medicine, biology, chemistry, applied sciences, physics, etc.). This allows the CMMI to provide services covering the entire workflow, from sample preparation to image acquisition, image analysis and interpretation of the data in their biological or medical context. Training services are also available, directly or in partnership with HelSci, the continuing education service in Health and Life Sciences of the ULB.



MAJOR EQUIPMENTS ◀

- ▶ NanoSPECT and NanoScanPET/CT (Mediso)
- ▶ 1T and 9.4 T MRI (Bruker ICON and Bruker Biospec)
- ▶ in vivo optical imager (Biospace Lab PhotonImager) and multispectral opto-acoustic imager (iTheraMedical InVision 256-TF)
- ▶ Histology: Automated IHC system (Ventana Discovery XT), TMA (Alphelys MiniCore), Slide scanner (Hamamatsu Nanozoomer 2.0-HT)
- ▶ Electron microscopes: TEM (FEI Tecnai 10), SEM (FEI Quanta 200 FEG), and soon cryo-TEM (FEI Talos 200 kV)
- ▶ Fluorescence microscopes: CLSM (Zeiss LSM 710), compound spinning-disk, WF equipped for live imaging (Zeiss Axio Observer Z1)
- ▶ etc.



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