

## Integrated high performance 4x4D imaging: SPECT, PET, Optical & X-ray CT

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MILabs was founded in 2006 as an in-vivo imaging spin-off from the University Medical Centre Utrecht, the Netherlands. Today, the company is one of the global leaders in molecular imaging with the development of preclinical PET, SPECT, CT and Optical imaging systems. These imaging systems have received many international awards from the molecular imaging community and support the research of hundreds of satisfied users worldwide. Over three hundred peer-reviewed scientific papers have already been published to document the use of MILabs' multimodal imaging systems for SPECT, PET, CT, Autoradiography as well as bioluminescence, fluorescence and Cherenkov imaging applications.

MILabs molecular imaging systems are built in different base configurations to best meet the researcher's application needs, offering exceptional performance, cost-effectiveness and extremely high reliability. Whether offered as stand-alone units or in multimodal imaging configurations, MILabs is truly pushing the performance limits in terms of image quality and in-vivo imaging functionality. With 0.15 mm SPECT and 0.6 mm PET resolution, nuclear imaging performance is currently approaching physical limits, set by the positron range for PET. Complemented by micro-CT and Optical Imaging with unique autonomous operation on an integrated multi-modal platform, preclinical imaging with a MILabs system is guided by a simple, intuitive and user-friendly operation to ensure highly efficient workflows, including single-pass PET, SPECT, bioluminescence, fluorescence and CT imaging of small animals with a single dose of anesthesia and without having to shuttle animals between molecular imaging modalities

In this presentation, many scientific results spanning a wide range of applications and disciplines recorded by MILabs global customer base will be shown. These include ultra-high resolution images of glucose and density and occupancy of transporters/receptors in the brain, extremely detailed *in vivo* images of myocardial perfusion (simultaneous with metabolism and mechanical function), tumor markers, anti-cancer agents (e.g. antibodies) as well as imaging very low amounts of cells or molecules during a range of points in time. In addition, a fully integrated platform combining SPECT, PET, ultra-fast and ultra-high resolution CT, 2D and 3D bioluminescence and fluorescence imaging will be discussed.

