

Real-time solutions for molecular imaging

# Gamma Imager

compact planar/ $\mu$ SPECT scintigraphy  
with  $\mu$ CT registration

Oncology | Cardiology | Cardiovascular  
Inflammation | Pneumology | Radiotracer development  
Drug development | Biodistribution

 biospace lab

# Gamma Imager



## COMPACT

All modalities have been designed to minimize total footprint.

**Gamma Imager** is laptop operated for maximal portability

## UPGRADABLE

Each module can be purchased separately: switching from one modality to another is fast and easy

## FAST AND EASY

Quantitative information is easy to get from planar scintigraphy or  $\mu$ SPECT

## REAL-TIME

$\mu$ SPECT and  $\mu$ CT acquisitions are performed simultaneously, with REAL-TIME display of BOTH modalities and their registered fusion

## SUB - mm

Spatial resolution with pinhole collimation

## Planar scintigraphy

- **Gamma Imager** is fast, easy to operate and provides reliable quantitative information
- powerful hardware and software tools generate high resolution scintigraphic images on which regions of interest can easily be drawn for quantitation purpose
- full body mouse biodistributions are saved in a list mode file allowing separation of the image contributions of different radioisotopes as well as opening any time frame of interest
- **Gamma Imager** is compatible with a wide range of radioisotopes, including  $^{125}\text{I}$ ,  $^{81\text{m}}\text{Kr}$ ,  $^{201}\text{Tl}$ ,  $^{99\text{m}}\text{Tc}$ ,  $^{123}\text{I}$ ,  $^{111}\text{In}$
- **Gamma Imager** is operated from a notebook computer and the ideal solution for multi sites experiments including small animal facilities

## $\mu$ SPECT

- switching from planar scintigraphy to  $\mu$ SPECT imaging is very easy and convenient
- this cost effective solution has been designed to provide state of the art performance with minimal footprint, compatible with any lab bench-top
- during acquisition, a  $\mu$ SPECT reconstructed transaxial slice is displayed and refreshed continuously for close experiment monitoring
- dynamic studies are available in  $\mu$ SPECT mode with 1 minute time resolution
- parallel collimation and high resolution pinhole collimation are available

## $\mu$ SPECT/ $\mu$ CT

- **Gamma Imager - sct** hardware and software provide 3D image fusion that combines  $\mu$ CT high resolution anatomical image with  $\mu$ SPECT functional information
- $\mu$ CT large field of view is compatible with large rat imaging as well as full body mouse imaging
- **Gamma Imager - sct** performs both  $\mu$ SPECT and  $\mu$ CT acquisitions simultaneously
- fused  $\mu$ SPECT/ $\mu$ CT images are displayed in real-time and refreshed continuously during the experiment.



**Gamma Imager**  
planar scintigraphy



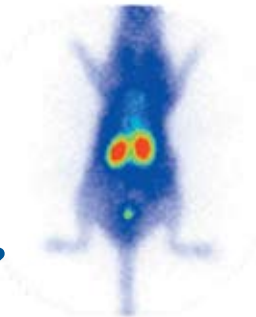
**Gamma Imager - s**  
 $\mu$ SPECT



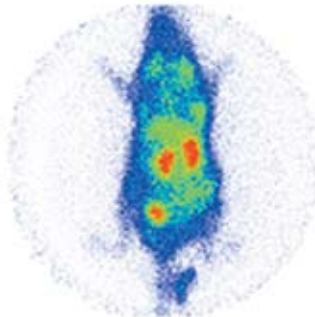
**Gamma Imager - sct**  
 $\mu$ SPECT/ $\mu$ CT

## Fast, easy and quantitative biodistributions

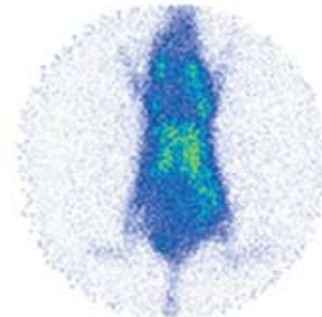
1h p.i.



24h p.i.



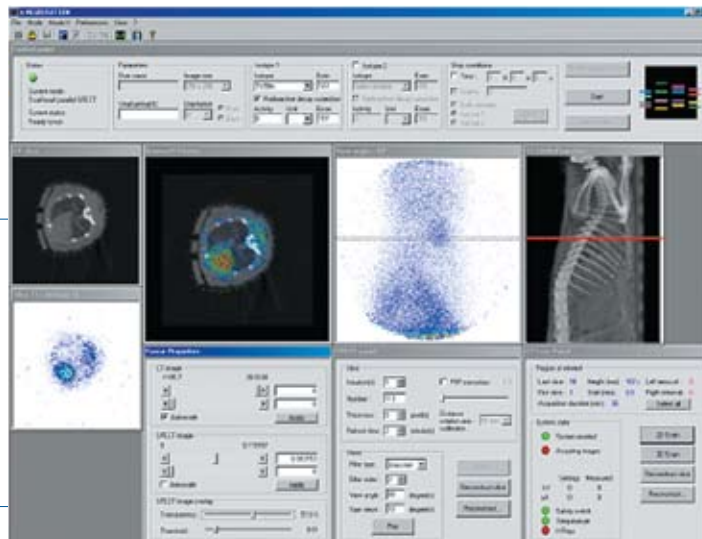
48h p.i.



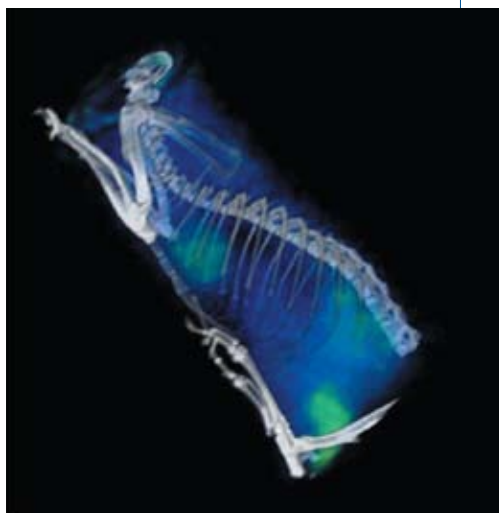
Planar scintigraphy :  
biodistribution of a  $^{111}\text{In}$  complex functionalized  
with Glutamine residues in HER-2/neu mouse.  
*Courtesy of Dr. S. Aime, Univ. Torino*

## True real-time $\mu\text{SPECT}/\mu\text{CT}$ registration and display

Screenshot during  
a  $\mu\text{SPECT}/\mu\text{CT}$   
acquisition,  
 $\mu\text{SPECT}$ ,  $\mu\text{CT}$  and fused  
 $\mu\text{SPECT}/\mu\text{CT}$  slices  
are displayed and  
refreshed continuously  
during experiment.

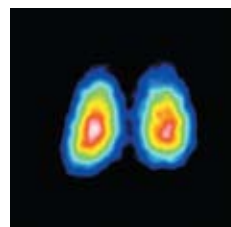


## 3D $\mu\text{SPECT}/\mu\text{CT}$ registration



$\mu\text{SPECT}/\mu\text{CT}$   
 $^{99\text{m}}\text{Tc-MIBI}$ .  
*Courtesy of Dr. M. Kilbourn,  
University of Michigan*

## Sub-mm spatial resolution



$^{125}\text{I}$  pinhole  $\mu\text{SPECT}$   
of mouse thyroid.  
*Courtesy E. Noirault, INSERM*

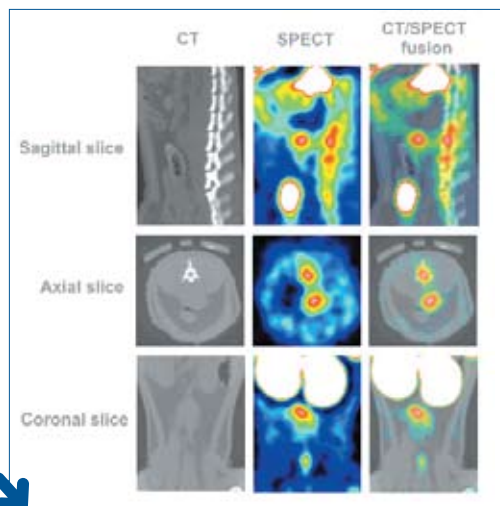
$\mu\text{SPECT}/\mu\text{CT}$   
 $^{99\text{m}}\text{Tc-MIBI}$ .  
*Courtesy of T. Higuchi,  
Nuklearmedizinische  
Klinik, Munich, Germany*



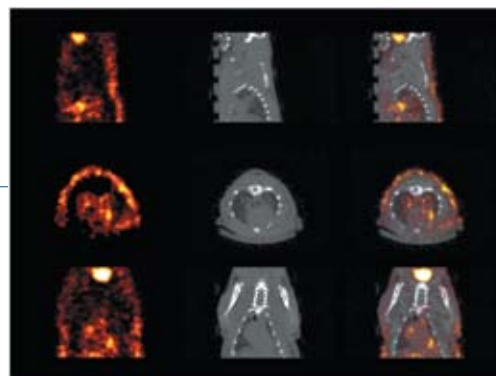
## 2D $\mu\text{SPECT}/\mu\text{CT}$ registration

# Gamma Imager | Gamma Imager-s | Gamma Imager-sct in molecular imaging applications:

## Cardiac/cardiovascular



μSPECT/μCT evaluation of thrombus activity in abdominal aortic aneurysms using <sup>99m</sup>Tc – AnnexinV.  
*Courtesy of Dr. L.Sarda, INSERM, France*

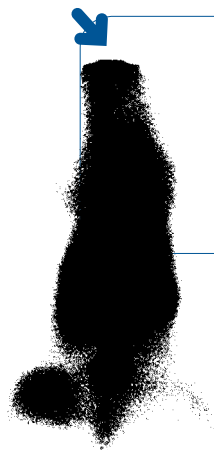


μSPECT/μCT evaluation of stem cells viability in rat heart.  
*Courtesy of T. Higuchi, Nuklearmedizinische Klinik, Munich, Germany*

## Oncology



μSPECT/μCT tumor growth evaluation using <sup>125</sup>I labeled antibody. 10<sup>6</sup> ACE cells have been grafted 12 days prior to imaging. Antibodies have been I.V. injected 2 days prior to imaging.  
*Courtesy of Dr. Pèlerin, CRLC Val d'Aurelle, France*



Planar scintigraphy of tumor angiogenesis in mice with the αvβ<sub>3</sub>-specific tracer <sup>99m</sup>Tc-RAFT-RGD. *Courtesy of L.RIOU, INSERM, France.*