

Real-time solutions for molecular imaging

Micro Imager

high resolution, real-time
quantitative autoradiography
with multiple label option

Pharmacology | Neurosciences | Molecular Imaging
Genomics | Molecular Biology | Medicine
Cosmetology | Environment | Biochemistry

 biospace lab

Micro Imager



DIGITAL
DETECTION

HIGH
RESOLUTION

FAST
ACQUISITION

MULTIPLE PROBE
DISCRIMINATION

Finally a digital solution
to micro autoradiography :

Micro Imager is 50 times faster than film with tritium labeled samples, allows precise quantitation, and boasts a 15 μm resolution unsurpassed by any other non film technique.

Micro Imager is fast, precise
and easy to operate

- no complex techniques or procedures are required
- 15 μm spatial resolution opens new fields for digital micro autoradiography
- real-time display and list mode data file storage avoid risk of under or over exposure
- image registration is available using either direct white light sample illumination or image import from microscope
- an exclusive patent allows simultaneous imaging and discrimination of multiple emitters
- precise quantitation can be performed even at very short acquisition times

Accurate analysis of labeled
molecules in tissue sections
and other applications

- ex vivo positron and gamma emitter imaging
- in situ hybridization
- receptor-ligand
- binding assays
- metabolic tracer experiments
- DNA arrays
- biochips



The very high resolution of the **MicroImager** opens a wide range of applications in :

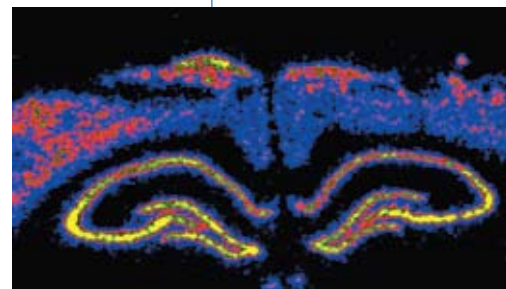
Genomics

Micro array involving 220 Clones at 300µm pitch on a 5mm x 5mm chip. The ^{33}P probe was prepared from rat brain cells, labeled and hybridized to the corresponding cDNAs on the slide.

Courtesy of S. Dumas and J. Mallet, LGN



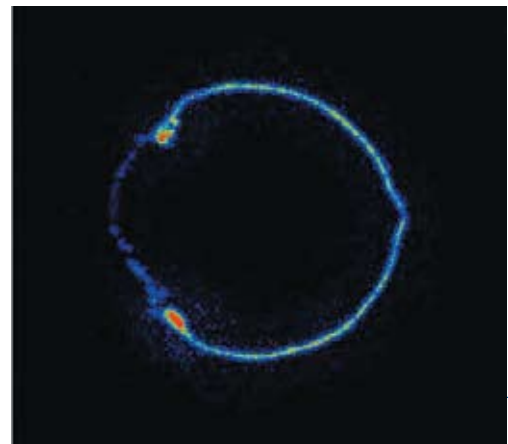
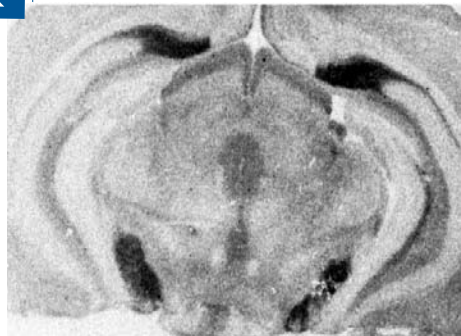
In Situ Hybridization study in rat hippocampus using a ^3H labeled probe.



Tissue sections

Receptor Binding Assay: Characterization of Serotonin receptors on a rat brain section, with ^{125}I labeled serotonin-O-carboxymethylglycine. The image shows a heterogeneous distribution with regions rich in 5-HT 1B and 5-HT 1D binding sites. The absence of saturation enables distinguishing all structures in the section.

Courtesy of L. Ségu, CNRS URA 339, Bordeaux, France



Choroid membrane of a rat eye (^{14}C label).

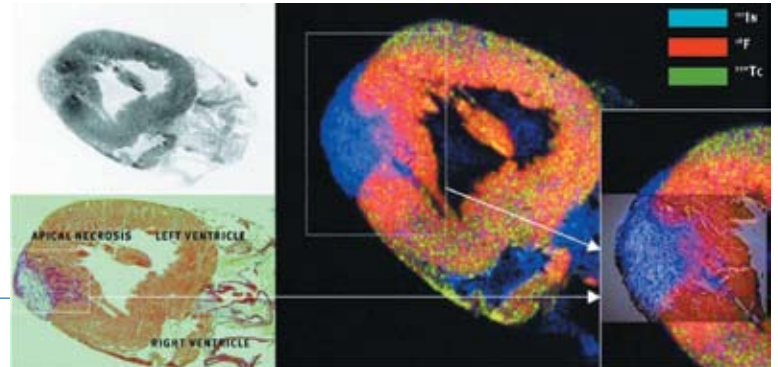
Courtesy of Dr Delbos, Laboratoires Servier, Orléans, France



Tritium labeled rat kidney section
Courtesy of Steve Harris, Roche, Welwyn, United Kingdom

Micro Imager in molecular imaging applications:

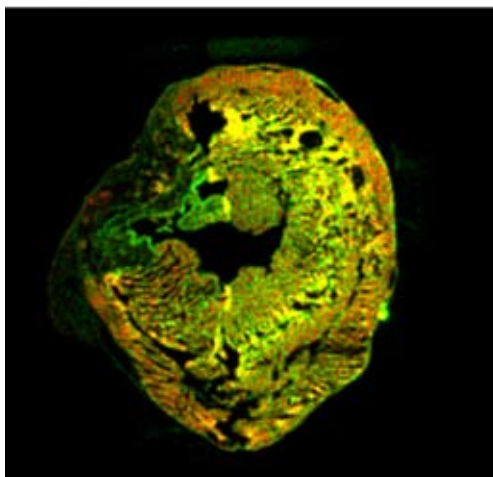
Probe multiplexing for more in depth investigation



Images from histopathological slice of infarcted myocardium from a rat, which was injected with ^{18}F FDG, $^{99\text{m}}\text{Tc}$ -Sestamibi and ^{111}In -DTPA prior to sacrifice. The slice was colored with a red sirius solution (lower left panel) revealing in red the fibrosis within the infarcted region. The total μ IMAGER image is represented in a grey scale in the upper left panel. Distributions from each of the 3 isotopes were computed from one single acquisition, and represented in the right panel by attributing a primary color (Red, Blue, Green) to each isotope.

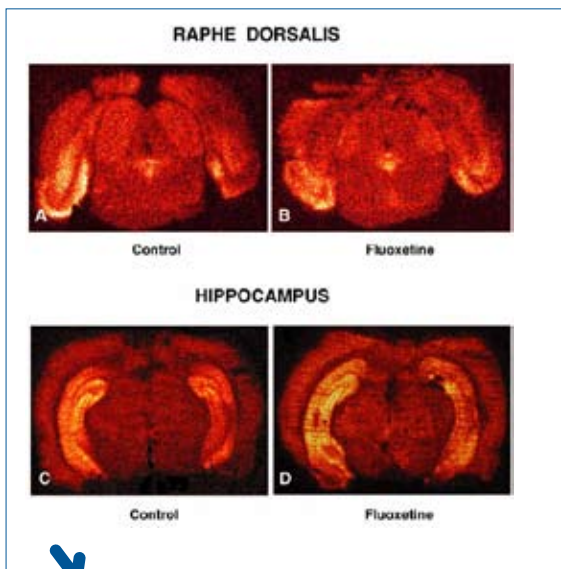
Courtesy of S. Poussier (S. POUSSIER and al, J Nucl Cardiol; 12:229-30, 2005)

Fast post mortem imaging after in vivo sessions for high resolution information



Simultaneous imaging of $^{99\text{m}}\text{Tc}$ -NOET and ^{201}Tl in a rat model of chronic reperfused myocardial infarction.

Courtesy of L. RIOU, INSERM 0340



$[^{18}\text{F}]$ MPPF binding to 5-HT $_1$ A receptors in tissue sections across raphe dorsalis (A, B) and hippocampus (C, D) of saline control (A, C) and fluoxetine-treated (B, D) rats. Note the comparable density of binding in both regions in the treated and control rats.

Courtesy of L. Zimmer (M. Riad and al, J Neuroscience; 24: 5420-5426, 2004)