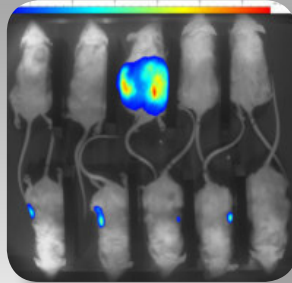
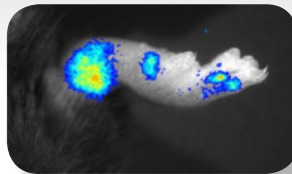




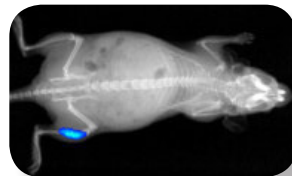
UNRIVALLED OPTICAL IMAGING SOLUTIONS



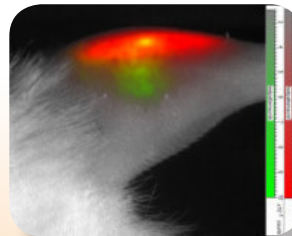
HIGH THROUGHPUT



HIGH RESOLUTION



X-RAY



TOMOFLUO

MULTISPECTRAL
ANALYSIS

3D

AND BEYOND...

PHOTONIMAGER™

REAL-TIME BIOLUMINESCENCE
AND FLUORESCENCE IMAGING SYSTEMS

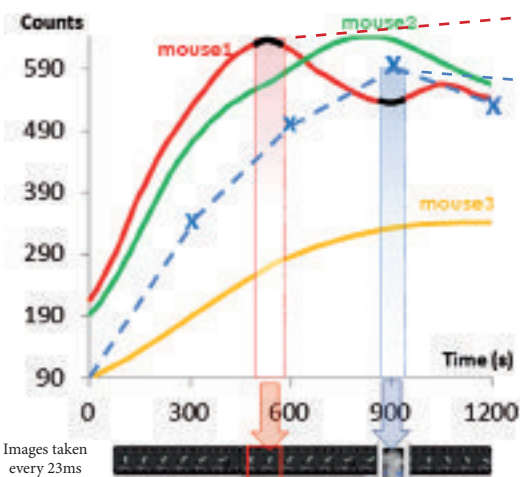
REAL-TIME IMAGING CAPABILITY

- UNPARALLELED PERFORMANCE IN TEMPORAL INFORMATION
PRECISE MONITORING OF SIGNAL KINETICS DURING ACQUISITIONS.
- INTENSITY CURVES AUTOMATICALLY EXTRACTED POST ACQUISITION.
TIME WINDOWS SELECTION FOR COMPLETE CONTROL OVER QUANTIFICATIONS.
- IDEAL FOR CALCIUM REPORTERS.

THE IMPORTANCE OF REAL-TIME SIGNAL ACQUISITION

BIOLUMINESCENCE SIGNAL POST S.C. INJECTION OF FLUC EXPRESSING MESENCHYMAL STEM CELLS

Real-Time kinetic curves for 3 different mice from one acquisition

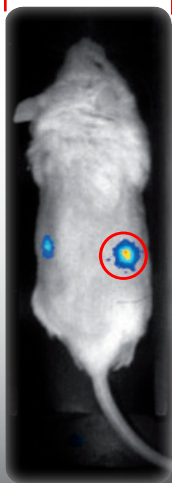


Images taken every 23ms

Mouse 1 measured at the signal plateau of the Real-Time kinetic curve of mouse 1



Mouse 1 measured at the signal plateau of the standard kinetic curve.



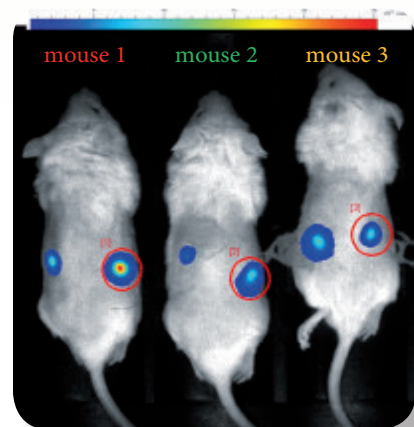
The signal peak has been missed

Actual time profile & accurate plateau time window

Extrapolated standard kinetic curve with arbitrary plateau time window

It is current practise to image after a waiting period extrapolated from previous ampirical studies (usul.10 min) without true understanding of the real signal kinetics of a specific genetic reporter in its actual environment. The PhotonIMAGER Real-Time capabilities allow measurement of true signal kinetics and complete control over quantifications

Simultaneous Bioluminescence acquisition for three mice



B. Rousseau - Université Victor Segalen Bordeaux 2

***In vivo* bioluminescence signals can vary from one animal to another or from one organ to another.**

To accurately compare BLI signals, each Region of Interest (ROI) measurement should be taken at the signal plateau. With the analysis Software, M3Vision, Time Window quantification one mouse click away.

PHOTONIMAGER™ SYSTEMS

THE ONLY OPTICAL IMAGERS WITH TIME-WINDOW CONTROL AND SIGNAL KINETICS MONITORING CAPABILITIES.

A UNIQUE MODULAR INSTRUMENT
FOR LOCALIZATION AND QUANTIFICATION OF BIO-
LUMINESCENCE OR FLUORESCENCE REPORTERS
IN VIVO & IN VITRO

BIOLUMINESCENCE & FLUORESCENCE IMAGING

- FULL SPECTRUM CAPABILITY FROM BLUE TO NEAR-INFRARED IN BLI & FLI:
 - 16 EXCITATION BAND PASS FILTERS (400 UP TO 800NM)
 - 15 ULTRA-HIGH PERFORMANCE BAND PASS EMISSION FILTERS.
- AUTOMATED AUTOFLUORESCENCE SUBTRACTION
- SPECTRAL UNMIXING
- MULTILABEL CAPACITIES
- FROM WHOLE BODY TO CELL SIZE

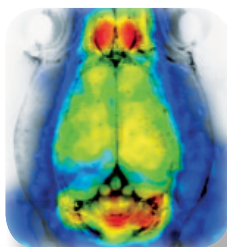
UNMATCHED PERFORMANCE & ACCURACY

- UNEQUALED SENSITIVITY FOR REAL-TIME DETECTION OF WEAK BLI SIGNALS
 - INTENSIFIED CCD CAMERA WITH NEGLIGIBLE READOUT NOISE
 - UNMATCHED SPATIAL RESOLUTION WITH NO PIXEL BINNING.
 - SIGNAL ACQUISITION FROM THE VERY FIRST SECOND.
(NO NEED FOR EXPOSURE SETTINGS PRIOR TO IMAGING)
- ULTRA HIGH TEMPORAL RESOLUTION (60 / 33 FPS - IDEAL FOR Ca^{2+} REPORTERS)
- ACCURATE SIGNAL LOCALIZATION & QUANTIFICATION ($10^5/10^6$ DYNAMIC RANGE WITH HD MODE)

**MAIN APPLICATIONS FOR
THE PHOTONIMAGER™**

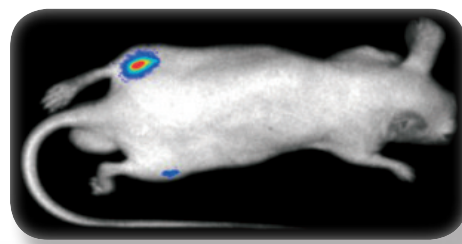
BIODISTRIBUTION
CANCER RESEARCH
GENE EXPRESSION
INFECTIOUS DISEASE
NEUROSCIENCE
PHARMACOKINETICS
STEM CELL RESEARCH

**GFP labeled neuronal
precursors in a mouse brain
Fluorescence mode**



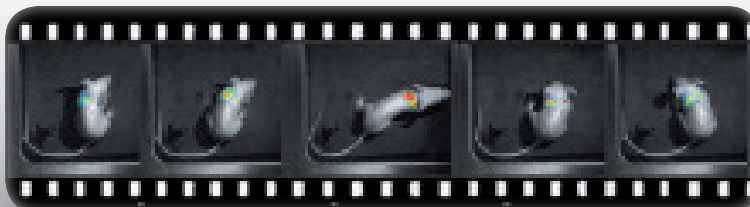
*Dr Couillard Despres and Pr. L. Aigner
Regensburg University*

**R1M-fluc positive tumor on the
right flank of a mouse
Bioluminescence mode**



Keyaerts et al., 2008

**InActio® imaging of a freely moving mouse carrying a
Luciferase expressing tumor, InActio® Module**



Dr. R. Boisgard – CEA; SHFJ Orsay

ONE MODULAR SYSTEM FOR ALL APPLICATIONS

MODULAR DESIGN FOR EVER EVOLVING RESEARCH.

NEW MODULES CAN EASILY BE FITTED ON PREVIOUSLY INSTALLED SYSTEMS.

AN **UPGRADEABLE SYSTEM** WITH STATE-OF-THE-ART TECHNOLOGY

IN ACTIO® MODULE

kinetic imaging of freely-moving animals

4VIEW® MODULE

simultaneous multi-angle acquisition

3D MODULE

3D quantitation of VOIs

MACROLENS MODULE

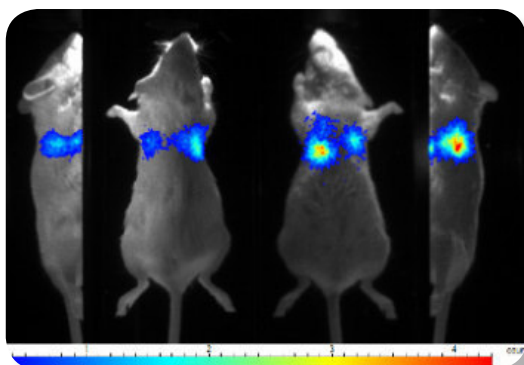
higher resolution optical imaging

TOMOFLUO MODULE

ultra-sensitive 3D fluorescence imaging

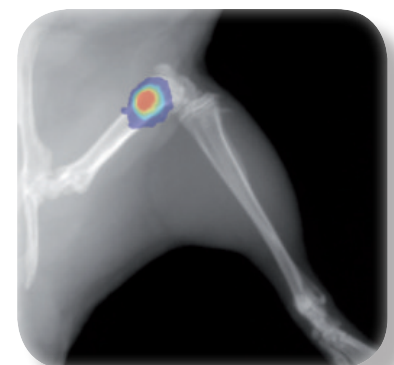
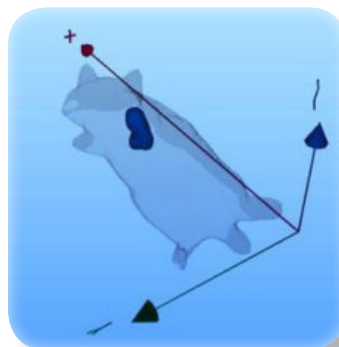
X-RAY MODULE

anatomical correlation with luminescent
reporters



Real-Time bioluminescent
signal acquisition
using the 4-View module

Volumetric bioluminescent signal
reconstruction from the
3D module data using the
M3Vision Analysis Software



Anatomic validation of
FLuc-expressing bone metastases
using the X-Ray module

USER FRIENDLY

- HIGH THROUGHPUT FOR LONGITUDINAL STUDIES (UP TO 10 MICE PER ACQUISITION)
- USER FRIENDLY (SLIDING STAGE, CONTINUOUSLY VARIABLE FIELD OF VIEW)
- DESIGNED FOR ANIMAL WELFARE (THERMOREGULATED, GASEOUS ANESTHESIA)
- MULTIPLE IMAGING MODALITIES AND COMPREHENSIVE ANALYSIS (M3VISION™)

TECHNICAL SPECIFICATIONS

PHOTONIMAGER™ RT

PHOTONIMAGER™ OPTIMA

Camera	PHOTONIMAGER™ RT	PHOTONIMAGER™ OPTIMA
Sensor	Intensified CCD Camera (18mm)	Intensified CCD Camera (25mm)
Objective Lens	24mm, f/1.4 - 22	50mm, f/1.2 - 16; 35mm, f/1.4 - 22 (on request)
Operating Temperature	-25°C	-25°C
Performance		
Detection Spectral Range (ICCD)	370 - 900nm	370 - 920nm
Temporal Resolution (frame rate)	60 fps	33 fps
Minimum Detectable Radiance	<80 photons/s/sr/cm ²	<40 photons/s/sr/cm ²
Binning	No need	No need
Dynamic Range	>5.0 orders of magnitude	>6.0 orders of magnitude
CCD Read Noise	No	No
Field of View (FOV)	Min: 11 x 8cm (standard system) Min: 3.4 x 2.8mm (with Macrolens) Max: 25,5 x 18cm	Min: 8 x 6cm (standard system) Min: 3.4 x 2.8mm (with Macrolens) Max: 33 x 25cm
Minimum Pixel Resolution	110µm (standard system) 5µm (with Macrolens)	45µm (standard system) 2µm (with Macrolens)
Illumination		
Source	150W Halogen lamp	150W Halogen lamp (NIRF Optimized)
Fluorescence	Linear filter excitation	16 excitation Filters
Filters		
Excitation Range	400 - 730 nm (40nm bandpass)	400 - 800 nm (25nm bandpass)
Emission Filters	6 Filters (HP)	15 Filters (25nm BP)
Autofluorescence Substraction	✓	✓
Multilabelling Capability	✓	✓
Spectral Unmixing	✗	✓
Animal Management		
Gas Anesthesia	✓	✓
Heated Stage	25°C - 45°C	25°C - 45°C
Imaging Chamber Size	25 x 26 x 38cm (WxDxH)	50 x 40 x 70cm (WxDxH)
Modules		
Kinetic Imaging	✓	✓
Simultaneous Multiple Views (4View)	✓	✓
InActio Analysis & Registration	✓	✓
Macrolens	✓	✓
3D Reconstruction Software	✗	✓
2D X-Ray Analysis & Registration	✗	✓
X-Ray field of view	-	22 x 11cm (5 mice)
Atlas overview & organ quantification	✗	✓
TomoFluo	✗	✓
System Requirements		
Operating System	Windows 7	Windows 7
Power Consumption	1KW @ 150 or 230V	1KW @ 150 or 230V
Dimensions	80 x 58 x 106cm (WxDxH)	87 x 60 x 142cm (WxDxH)
Weight	85 kg	185 kg
Portable Cart	NO	YES (on request)

FOR MORE INFORMATION

VISIT OUR WEBSITE:

www.biospacelab.com



Scan here
to visit now!

OR WRITE TO US:

info@biospacelab.com

- 2017-

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