Cellvizio[®] Lab IN VIVO PRECLINICAL IMAGING AT CELLULAR RESOLUTION





Cellvizio[®]Lab

by Mauna Kea Technologies

Cellvizio Lab is a fluorescence-based Confocal Laser Endomicroscopy (CLE) system, giving you real-time imaging at cellular resolution, in vivo

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- Visualize a wide range of tissues
- Capture functional and morphological images ٠
- Co-localize cells and molecules ٠
- Minimally invasive technique allows same animal follow-up studies •
- Reduce the number of animals used in studies •
- Find the perfect fit for your research with our large range of applications •

Follow biological processes in vivo at the cellular level



Cellvizio Lab is easy to use and highly adapted for your research needs

Adapted to your workflow

- Complementary to whole-body imagers
- Brings cellular-scale information to understand molecular mechanisms
- Large range of commercial fluorescent markers available

Work under physiological conditions

- Use a non- or minimally invasive procedure
- Work on anesthetized animals, in vivo

Longitudinal monitoring of animals

- Study tumor progression or efficacy of treatment on the same animal
- Use less animals for the study
- Get more reliable data

Real-time imaging

- Record dynamic changes in vivo
- Study drug uptake

Dual-color capability

- Co-localize molecules or cells
- Track a molecule of interest within its anatomical environment

See from surface to deep tissues, anywhere in the animal



non- or minimally invasive imaging

Compatible with multiple

Colonoscope: to image the digestive tract Bronchoscope: for lung imaging Needle: for a minimally invasive access Cathether: ideal for vascular imaging Stereotaxic frame: to target precise brain

Oncology, Infectious Disease, Inflammation -Immunobiology, Therapeutics - Nanomedicine,

Proven benefit in characterizing a wide range of biological processes

Vasculature and vasodynamics studies

- Study angiogenesis and extravasation longitudinally
- Measure vascular constriction and density

LONGITUDINAL IN VIVO IMAGING OF PANCREATIC CANCER



ProSense® 680: cathepsin activity

In vivo histology

- Assess cellular and vascular structure in vivo
- Use with endoscope to select area of interest

VASODYNAMICS OF A TUMORAL VESSEL UPON CARBOGEN INHALATION



Longitudinal monitoring of disease progression

- Detect and validate optical imaging agents ٠ of cancer in vivo
- Monitor biomarkers on the same animal over an extended period of time
- Accelerate the translation to the clinics •



Mouse colon histology



Intestine architecture and vasculature

Evaluation of cellular density

- Track stem cells migration and homing
- Detect bacteria and immune cells in situ and in real time longitudinally

* Image courtesy of G. Vande Velde, KU Leuven, Belgium



T cells in multiple sclerosis model (spinal cord)

In vivo biodistribution imaging

- Monitor transgene delivery
- Detect biomarkers in situ
- Track delivery and distribution of therapeutic compounds (nanoparticles or biomolecules)



Therapeutic compound biodistribution in the intestine vasculature

Assessment of drug activity

- Follow the response to treatment in live tissue
- Evaluate the impact of drug treatment on tissue vasculature



Confirmation of the integrity of the blood-brain-barrier after epilepsy treatment



Follow-up of microbial density over 43 days*



Detection of the expression of a reporter protein involved in liver fibrosis

Suitable for all, from fundamental to translational research

Select the best fit from our range of confocal microprobes

Easy to use

objectives

of optical fibers



LATERAL RESOLUTION (µm)	OPTICAL SECTION (μm)	WORKING DISTANCE (µm)	MAX. FIELD OF VIEW (μm)
3.3	15	0	600
3.3	15	0	300
3.3	15	0	600
3.3	15	0	325
3.5	70	100 at 488 170 at 660	600
3.5	30	50 at 488 70 at 660	325
1.4	10	60	240
1.4	10	30	240
1.4	10	100	240

TIP

Cellvizio Lab provides high-resolution images for your publications



Product Specifications

Innovation at your fingertips

- Ultra-fast laser scanning
 technology shows real-time images
- Dual excitation and detection of fluorescence signals
- Unique image processing
 provides clear images

Cellvizio Lab software helps you quantify results

Easy control of instrument

- Hands-free video recording by using the foot pedal
- Track events during experiments by adding flags
- Multiple video and image exports: use IC-Viewer, Matlab or ImageJ for post-processing





Generate publication-ready data faster

One color 488 nm	One color 660 nm	Two colors 488 + 660 nm	
502-633 nm	673-800 nm	first line: 502-633 nm second line: 673-800 nm	
9-12 frames per second - advanced: up to 40 fps			
down to 1.4 microns, depending on confocal microprobe			
Image: jpeg, png, bmp, tiff, mhd - Video: avi, mpeg, mp4, swf			
3R			
31 x 48 x 52.5 cm, 35 kg			
	One color 488 nm 502-633 nm 9-12 down to Image: jpe	One color 488 nm 502-633 nm 9-12 frames per second - down to 1.4 microns, depend Image: jpeg, png, bmp, tiff, mh 31 31 x 48 x 52.	

Intuitive analysis Quantification allows for kinetic analysis

- Draw and analyze multiple
 - regions of interest
- Track the evolution of fluorescence
 - signal over time

Advanced Mosaicing[™] for smart image stitching

- To increase the field of view:
 - up to several millimeters
- Compensates for motion artifacts
 - and distortions

Vessel Detection™ to quantify angiogenesis

- Automatic detection of vessels based
 - on image segmentation
- Provides key metrics: functional capillary
 - density, distribution of diameters, total vessel length...
- Can be applied on mosaics as well

Join the Cellvizio Community now!



You can be part of a growing community of researchers who are sharing knowledge and expertise in CLE for preclinical and translational research. Join the community to keep up to date with our latest news, events and educational tools.

Online Resources

- Protocols
- Application notes
- Live Webinars
- Video tutorials

Technical Support

- On-site support
- Online support
- For more information, contact us or visit our website: cellviziolab.com cellviziolab@maunakeatech.com

