PRODUCT BROCHURE

InnoQuant

Quantitative Fluorescence whole-slide scanner

INNOPSYS

innopsys.com

PRODUCT HIGHLIGHTS

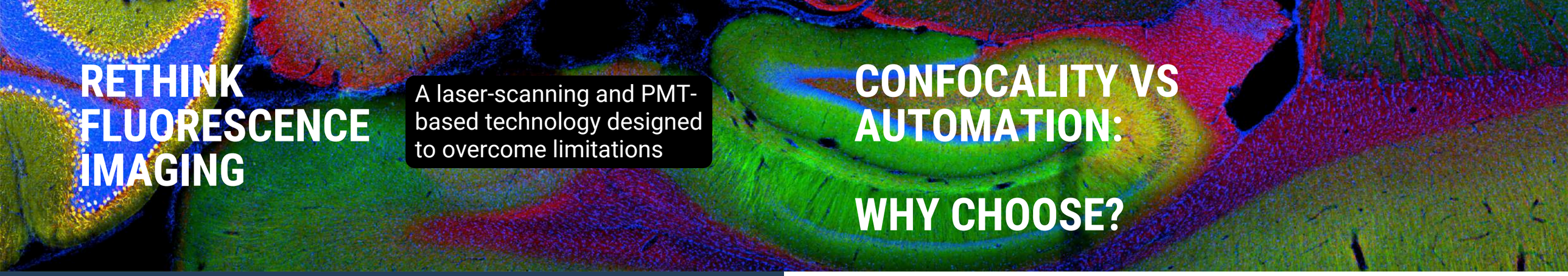
POINT-BY-POINT LASER SCANNING AND PMT DETECTION

SIMULTANEOUS MULTIPLEX FLUORESCENCE

ILLUMINATION UNIFORMITY ACROSS THE WHOLE SLIDE

NO PROCESSING REQUIRED, IMAGES FREE FROM STITCHING-RELATED BIAS

BUILT-IN QC TOOL ENSURING CONSISTENT **REPRODUCIBILITY** ACROSS SLIDES, OVER TIME, AND BETWEEN LABS



RETHINK FLUORESCENCE IMAGING

A laser-scanning and PMT-based technology designed to overcome limitations

CONFOCALITY VS AUTOMATION: WHY CHOOSE?

CAMERA-BASED SYSTEMS	INNOQUANT
Sequential acquisition of several fields of view with various exposure times. Most slide scanners use a time-consuming autofocus mode with focus points.	Simultaneous 4-color line by line fast scan to ensure rapid results. A robust autofocus algorithm based on the sample topography determines the focus map in 45 seconds. **SPEED**
Reproducibility compromised by optical path variability.	Performance guaranteed by built-in control-checks using a validation slide. Trust your system at any time. **REPRODUCIBILITY**
Multiple-fields-of-view assembly generates a mosaic effect and a lack of homogeneity. Its correction creates a biais for quantitative analysis.	Full-width line scanning with PMT detector certifies a raw value for each pixel created. 98% illumination uniformity across the entire slide. **QUANTITATIVE DATA**

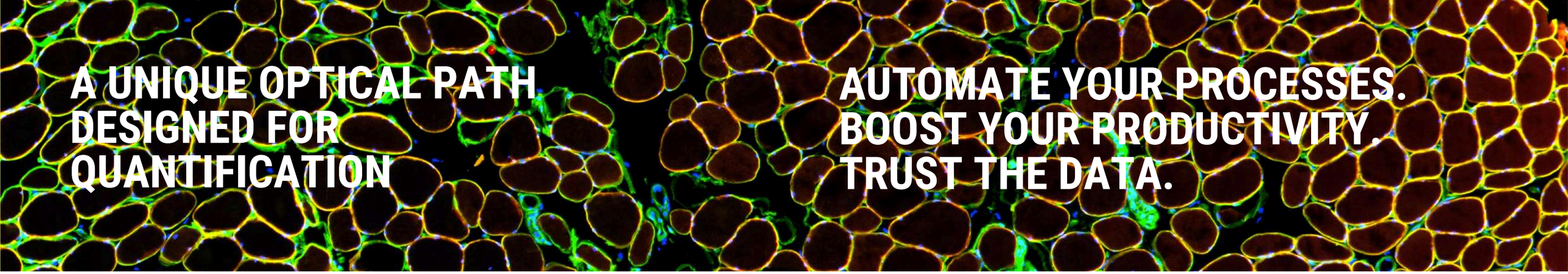
A user-friendly automated slide scanner designed to overcome the main limitations of other instruments. **Take the best of both worlds: automation applied to confocality.**

Scan up to 24 slides at a 20x equivalent magnification, and at the scale of the full tissue.

With dynamic focusing, TIFF multi-resolution output, and full automation, **InnoQuant bridges the gap between widefield and confocal microscopy**, offering unmatched speed and consistency for multiplexed tissue analysis.

Whether you’re working in neuroscience, oncology, or translational research, InnoQuant brings you the image quality and data integrity needed to scale up your whole-slide fluorescence imaging — reliably and efficiently.

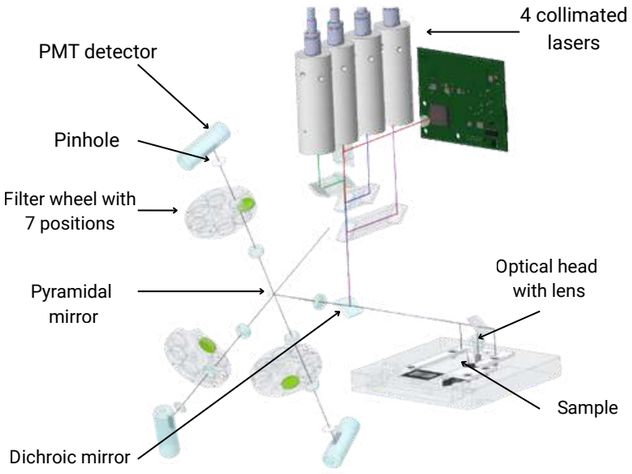
AUTOLOADER SLIDE PREVIEW



A UNIQUE OPTICAL PATH DESIGNED FOR QUANTIFICATION

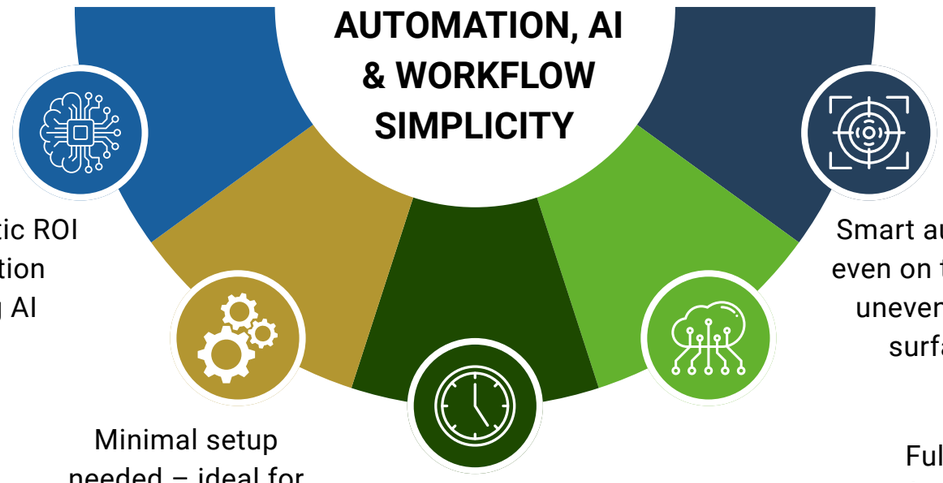
AUTOMATE YOUR PROCESSES. BOOST YOUR PRODUCTIVITY. TRUST THE DATA.

HIGH-PERFORMANCE MULTIPLEXED FLUORESCENCE



- Excitation wavelengths: 375 / 488 / 561 / 640 nm
- All four channels scanned **simultaneously**
- **Patented spatial separation system** guides each emission beam to a dedicated PMT
- Each PMT has a 7-position emission filter wheel → **Wide fluorophore compatibility**

AUTOMATION, AI & WORKFLOW SIMPLICITY



Automatic ROI detection using AI

Smart autofocus even on thick and uneven tissue surfaces

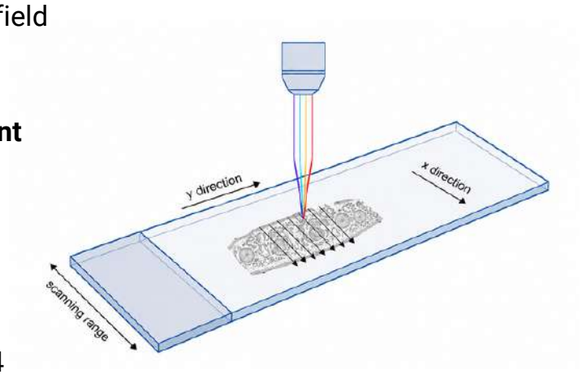
Minimal setup needed – ideal for core facilities & research labs

Save configurations to minimize settings time

Fully automated batch scanning

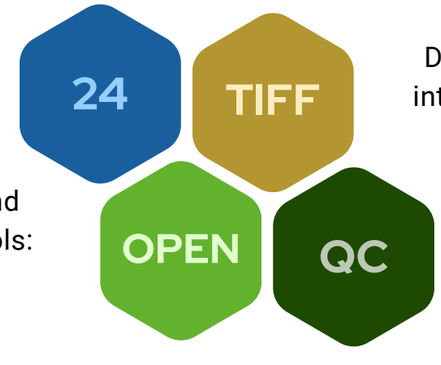
FROM LASER TO PIXELS – A NEW WAY TO SCAN SLIDES

- Full-width laser point-scanning system (no field of view)
- Each pixel receives **exactly the same amount of light**
- Tile free = no stitching, no artifacts, field uniformity
- Simultaneous excitation and detection via 4 **PMTs** for **high sensitivity, high dynamic range and preservation of raw pixel value fidelity**



CAPACITY, PRODUCTIVITY & SOFTWARE ECOSYSTEM

24-slide loader



Default TIFF format for interoperability with your analysis pipelines

Compatible with licensed and open-source downstream tools: ImageJ, QuPath, HALO, etc.

One-click *Check Scanner* quality control procedure

InnoQuant

Key Benefits at a glance

4 Color
Simultaneous multiplexing

24 slide capacity

Guaranteed Quantitative Results

98% illumination uniformity on the full slide. No post-processing, get your raw results

20x
Equivalent magnification

TIFF format
open source and easy to analyse

10 Minutes
for an adult mouse brain coronal section - focus and saving included

Scanning time independant from staining intensities
No exposure time.

0.5
µm/pixel

QUANTITATIVE RELIABLE RESULTS
DATA REPRODUCIBILITY AND QUALITY CONTROL

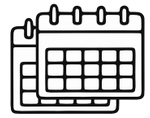
In quantification, every variation should come from your biology, not your instrument.

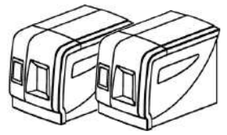
Our built-in *Check Scanner* procedure, using a dedicated slide powered by Argolight®:

- ✓ Controls the scanner parameters at any time
- ✓ Validates the state of the scanner
- ✓ Ensures reproducibility of the results

REPRODUCIBILITY
REPEATABILITY
RELIABILITY


inter-slide

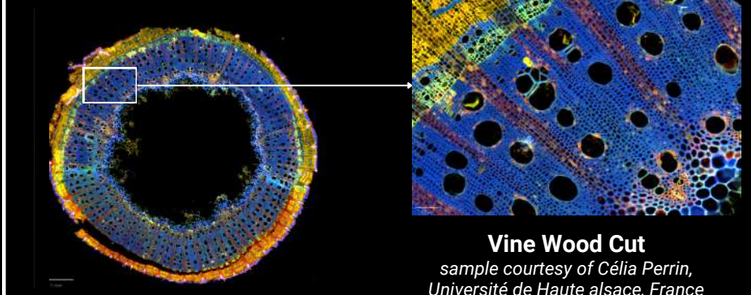

inter-day


inter-scanner

DR EVGENIA DOBRINSKIKH,
Assistant Professor, PhD. University of Colorado, Anschutz Medical Campus

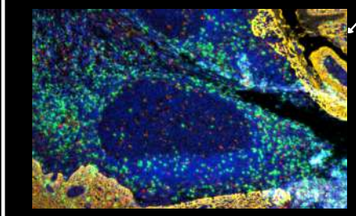
Our Core is helping many researchers with whole slide immunofluorescent images within and outside of University of Colorado. Main challenge is time, needed for big tissue scans and photobleaching. InnoQuant solves both problems very elegantly. Additionally, interface is user friendly and doesn't take a lot of time to start.

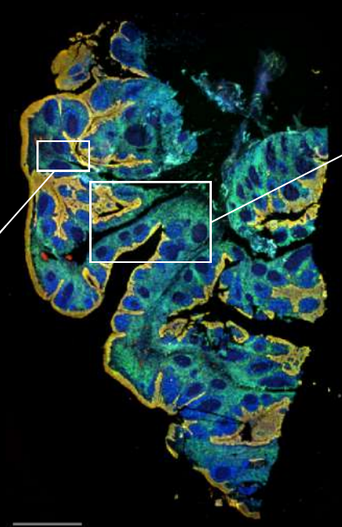
MAXIMUM VERSATILITY FOR A WIDE RANGE OF APPLICATIONS

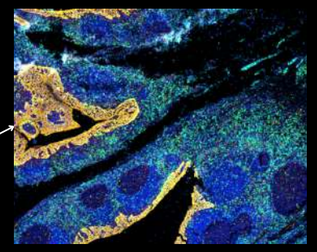


Vine Wood Cut
sample courtesy of Célia Perrin, Université de Haute alsace, France

PLANT BIOLOGY



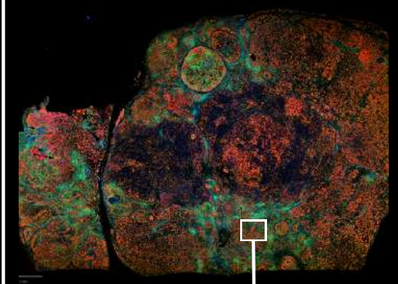


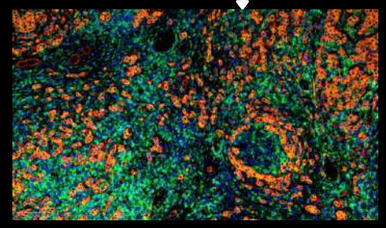


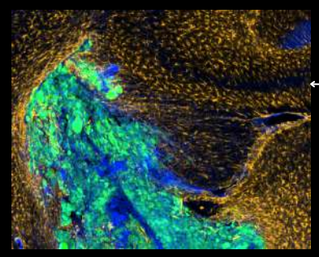
Tonsil Section
sample courtesy of AlphaXBio, China

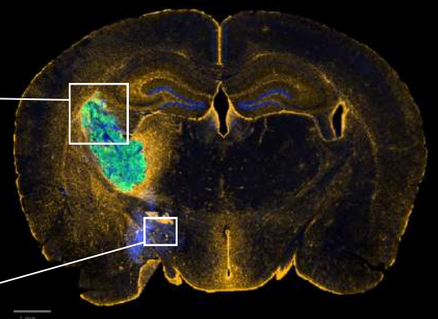
IMMUNOLOGY

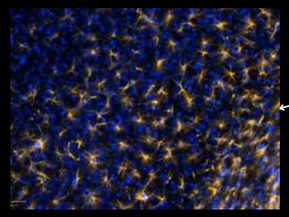
Breast Cancer Tissue
sample courtesy of Shanghai Jiaotong University



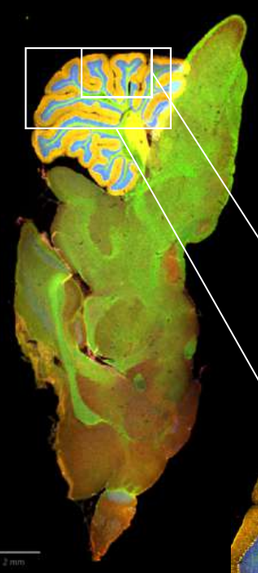


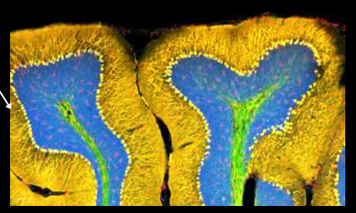






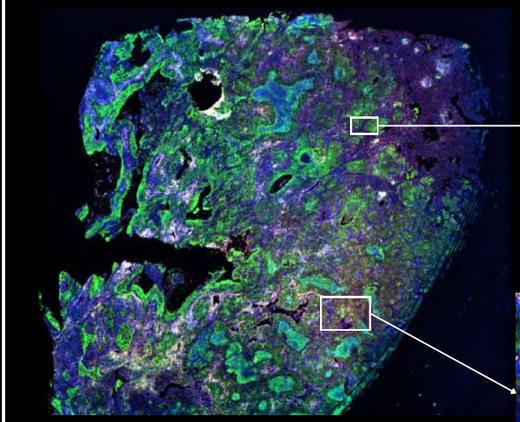
Brain Glioblastoma
sample courtesy of Lemercier/Chever, Université Rouen Normandie, France

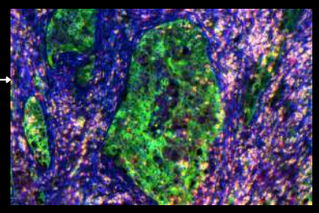




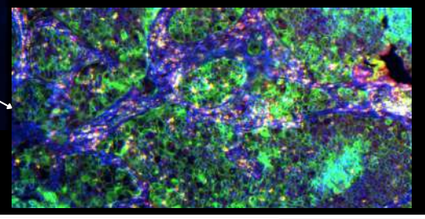
Brain Cerebellum
sample courtesy of EnCor Biotechnologies, USA

NEUROSCIENCE

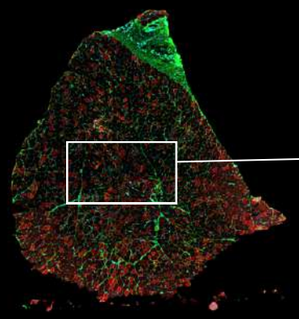


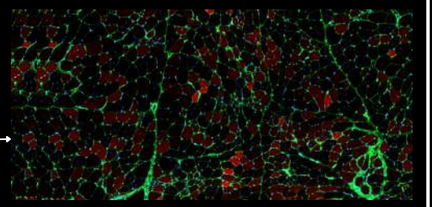


Non Small Cell Lung Cancer Tissue
sample courtesy of Cell signaling Technology



CANCER RESEARCH





Muscle with dystrophy
sample courtesy of Genethon, France

GENE THERAPY

DR ROBERT DE VRIES,
Associate Professor, Utrecht University, Chemical Biology & Drug Discovery.

”

The same foundations that made microarrays so robust now enable full tissue imaging, delivering the same level of precision and confidence. The InnoQuant system is intuitive, accessible to the whole team, and delivers highly uniform fluorescence images across entire slides.

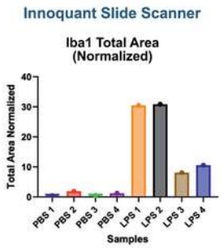
ONE SCANNER, A MULTITUDE OF BIOLOGICAL QUESTIONS

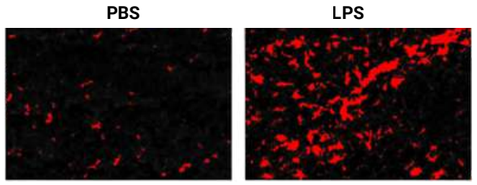
MICROGLIAL ACTIVATION IN NEUROINFLAMMATION MODELS

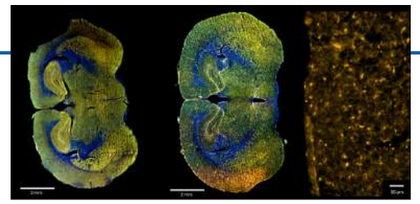
Goal: Evaluate inflammatory effect of LPS by examining microglial activation

Method: Analysis in ImageJ (Fiji) of the Iba1 signal to get the surface of microglial cells on PBS and LPS treated mice brain samples.

Results: Microglial total area is higher on LPS-treated samples compared to PBS-treated samples, in favor of an enhancement of microglial activity, a result of neuroinflammation caused by LPS.





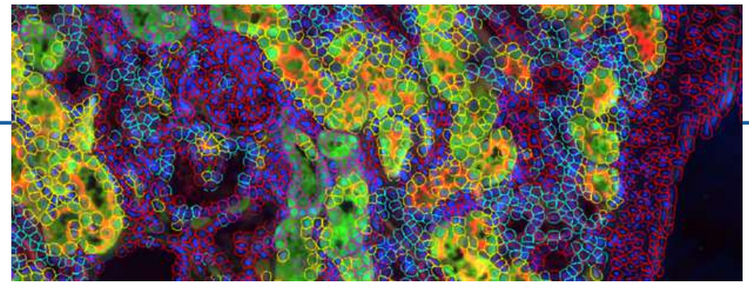


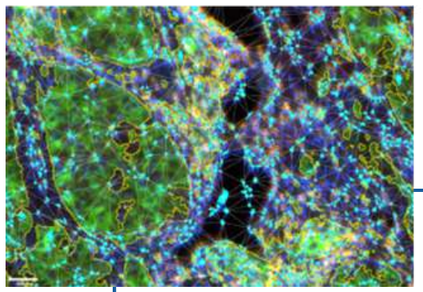
GENE THERAPY EFFICIENCY ASSESSMENT

Goal: Check the efficiency of a gene therapy treatment

Method: QuPath was used to detect cells and classify them according to single-marker positivity or double colocalization

Results: The proportion of cells positive for the signal was determined.



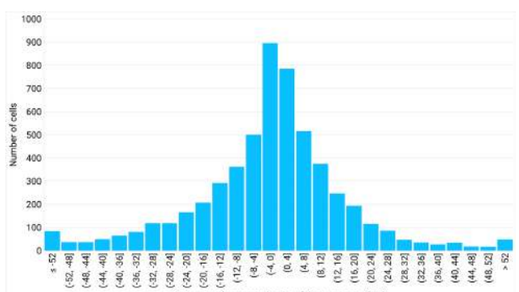


NSCLC TUMOR MICROENVIRONMENT STUDY

Goal: Characterize the spatial distribution of immune cells around the tumor area

Method: Use of QuPath to detect tumor and immune cells. Calculation of the distance between single immune cell and the tumor.

Results: Distribution of immune cells revealed
an increasing density gradient towards the tumor.

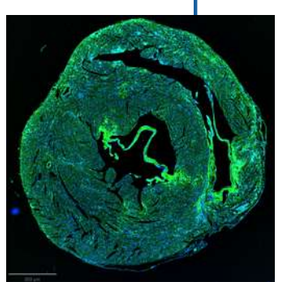


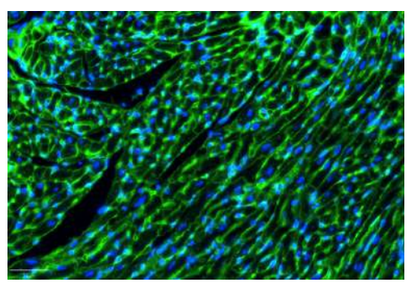
CARDIAC MUSCLE DEVELOPMENT AND CARDIAC TISSUE RESPONSE TO INJURY

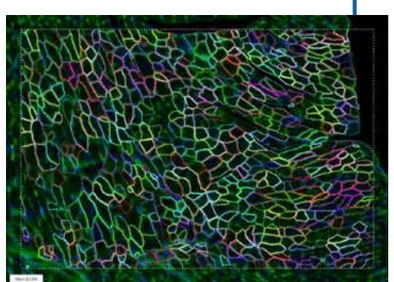
Goal: Perform automated cell segmentation to quantify cell area and assess cardiomyocyte size in relation to prenatal tissue injury.

Method: Cells were automatically segmented using the Cellpose integration in Histometrix, and their morphological features were quantified.

Results: Cell area measurements enabled the assessment of muscle development in response to injury.







DISCOVER HOW OUR SPECIFICATIONS & TECHNICAL FEATURES CAN MEET YOUR NEEDS

LASER EXCITATION WAVELENGTH	375 nm	488 nm	561 nm	640 nm
EMISSION FILTERS	FF01-440/40	FF01-513/17	FF01-593/40	FF01-680/42
	For customization: 6 additional filter positions available for each PMT			
COMPATIBLES FLUOROPHORES*	DAPI Alexa Fluor 350 Hoechst DyLight 350 Coumarin BV421 / BV510 BV603 / BV711 BV750 PacificBlue® CascadeBlue®	FITC Alexa Fluor 488 GFP Cy2 DyLight 488	TRITC Alexa Fluor 561 Cy3 DyLight 594 MitoTracker® Red	DRAQ 5 Alexa Fluor 647 Cy5 DyLight 650 MitoTracker® Deep Red
DETECTION TYPE	4 independant photomultipliers (PMT)			
PMT GAIN	Linear from 0.01 to 100%			
ACQUISITION MODE	4-color simultaneous acquisition			
FOCUS MODE	3 different focus options: autofocus, fixed focus and focus by content			
SLIDE SIZE	Compatible with standard microscopy slides: 26 x 76 mm / 1 x 3 inch Maximal standard thickness 1.8 mm / 0.07 inch			
LOADER CAPACITY	Single slide or 24-slide autoloader			
SCANNING AREA	Adjustable up to 26 x 76 mm / 1 x 3 inch			
SCANNING TIME	9 min for 10x10 mm area / 0.4 x 0.4 inches at 0.5µm/pix			
PIXEL SIZE	From 40 down to 0.5 µm			
IMAGE FORMAT	Non-proprietary image format (multi-resolution TIFF)			
POWER SUPPLY	100-340 VAC, 1.2 A, 50-60 Hz			
SIZES & WEIGHT	Single slide weight: 48 kg/105.8 lbs	Auto-loader weight: 52 kg/114.6 lbs		

**Non-exhaustive list of compatible dyes.*

WHAT CAN YOU EXPECT FROM WORKING WITH US:

- ✓ 20 years of expertise in quantitative fluorescence, mastering the full value chain from design to commercialization
- ✓ Responsive, expert-driven support beyond installation
- ✓ Identification of the most appropriate analytical tools and development of customized analysis protocols
- ✓ Development performed under an ISO 13485-certified quality management system
- ✓ Proven experience in OEM integration with leading global industry partners

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