

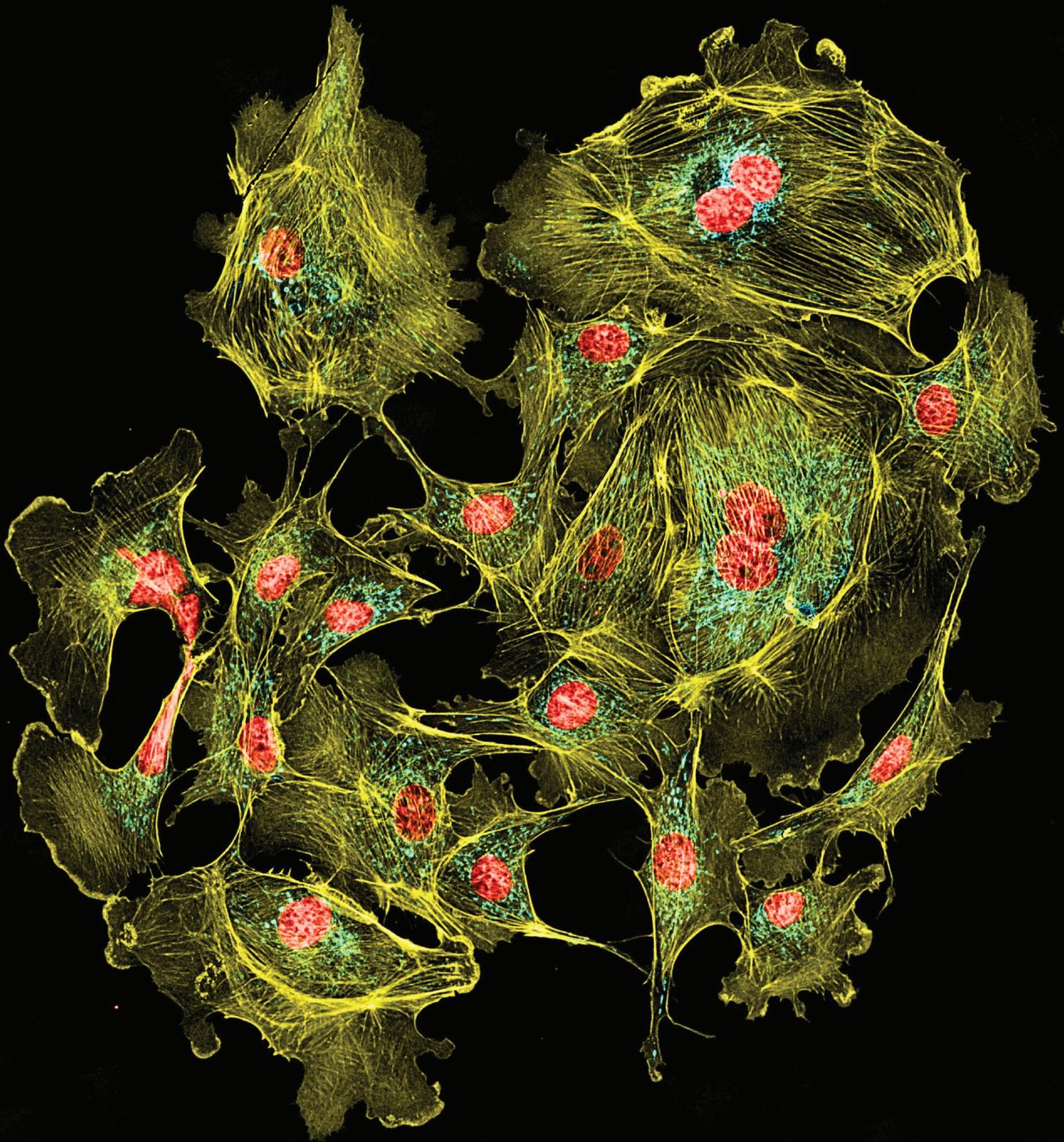
Digital Tools.
Computational Power.
Smarter Pathology.



Pannoramic Confocal Digital Scanner

Clarity in Every Dimension

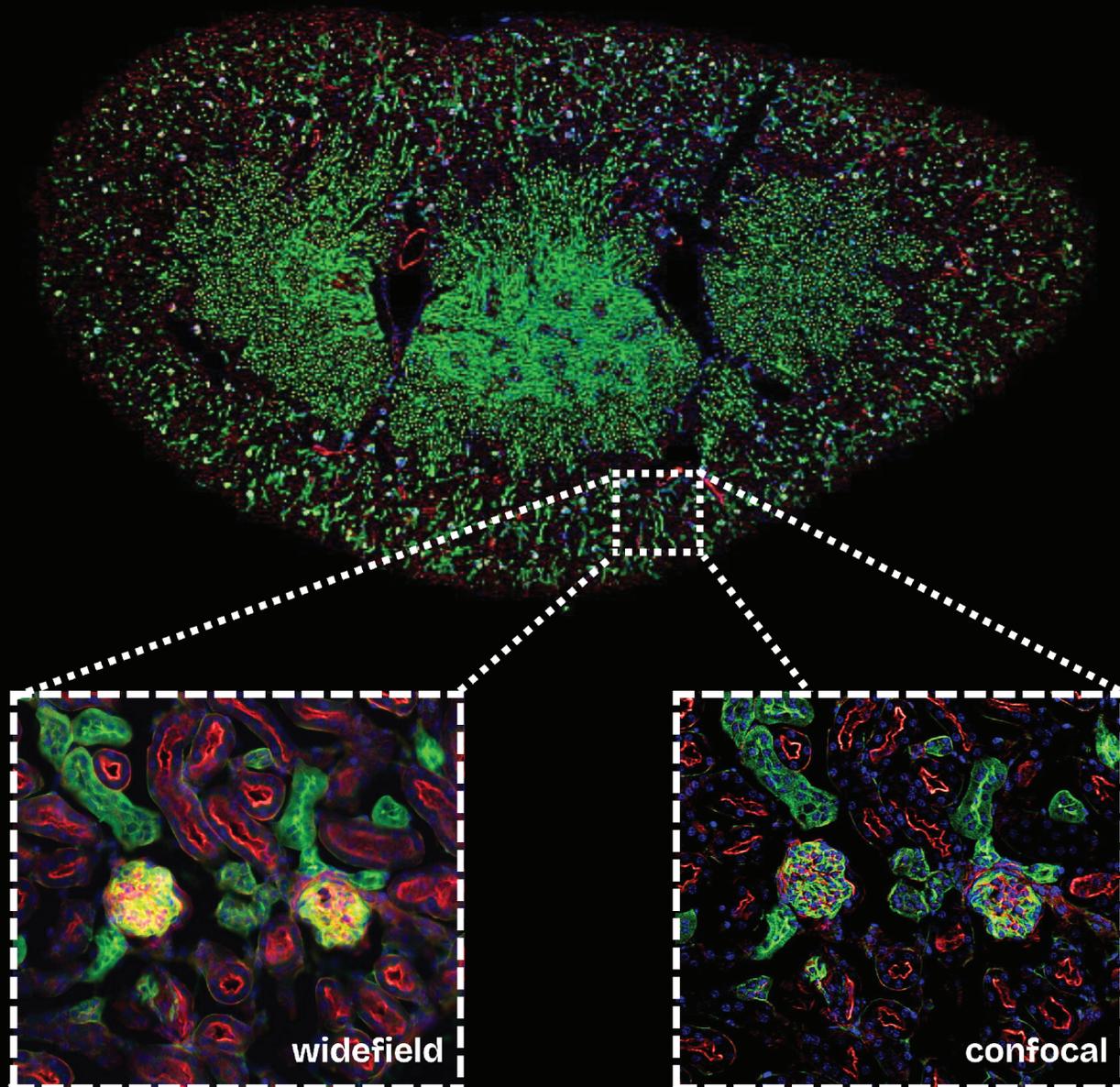
Pannoramic Confocal Digital Scanner



“Depth-resolved whole-slide imaging
for spatialbiology — beyond the
limits of widefield and classical
confocal systems.”

What is a confocal whole slide scanner?

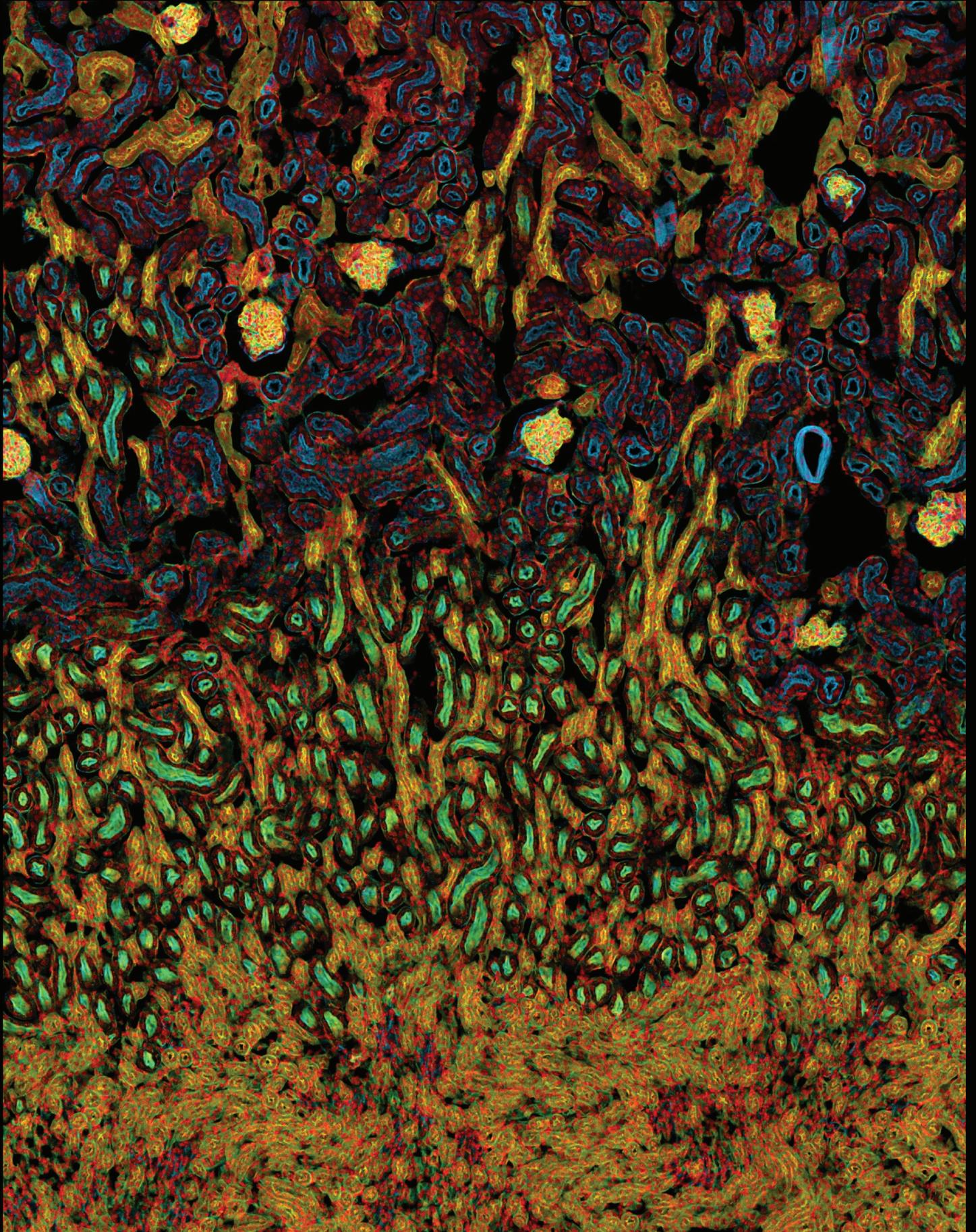
The Panoramic Confocal slide scanner is designed to **digitize entire tissue sections in high-resolution**, using optical sectioning to remove out-of-focus blur. It combines the **depth clarity and 3D imaging capability of confocal microscopy** with the **automation and throughput of whole-slide imaging**.



Whole-slide scan of mouse kidney (top), with zoomed-in regions(bottom) showing the difference between widefield fluorescence(left) and confocal imaging (right) captured from the same slide.

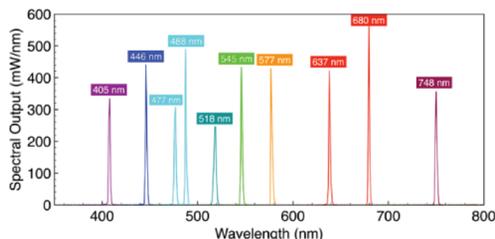
Get your own experience!

Scan the QR code to see the confocal whole slide Image on your phone.



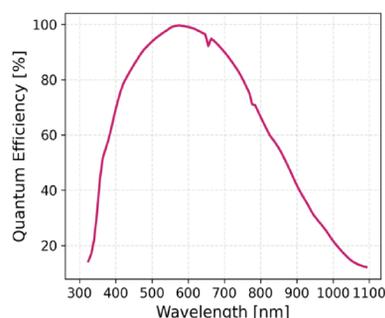
Next-Level Imaging Features

High Content Imaging with up to 9 Fluorescent Channels



Powered by a 7-channel solid-state light engine and advanced filter-cube combinations, the system supports detection of up to nine fluorophores in a single workflow, enabling high-plex biomarker co-localization and spatial molecular profiling.

High Quantum Efficiency Detection

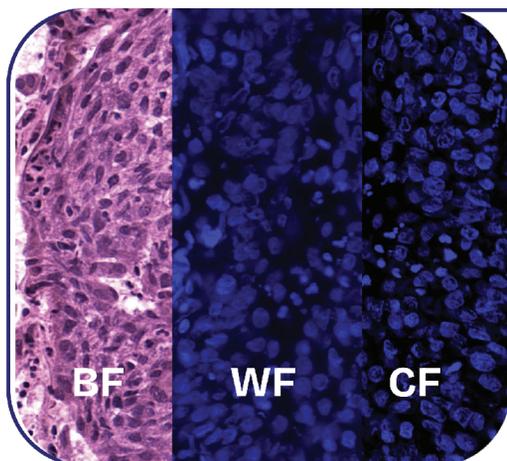


Pannoramic Confocal is equipped with a high-quantum-efficiency camera delivering outstanding sensitivity and low-noise imaging in every imaging mode.



High NA Objectives, Automated Water Immersion, Zero Manual Steps

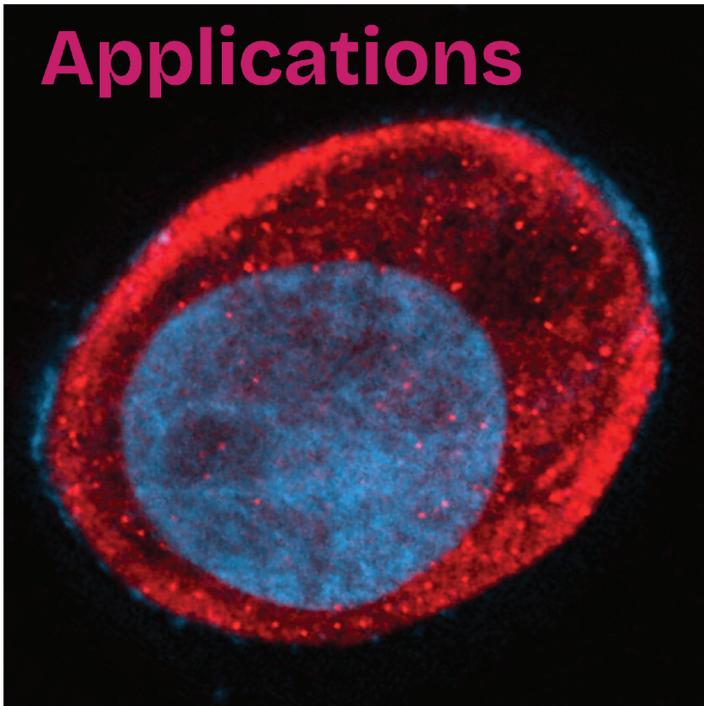
With a fully automated water-immersion system, Pannoramic Confocal ensures smooth, uninterrupted high-NA imaging - no manual intervention required.



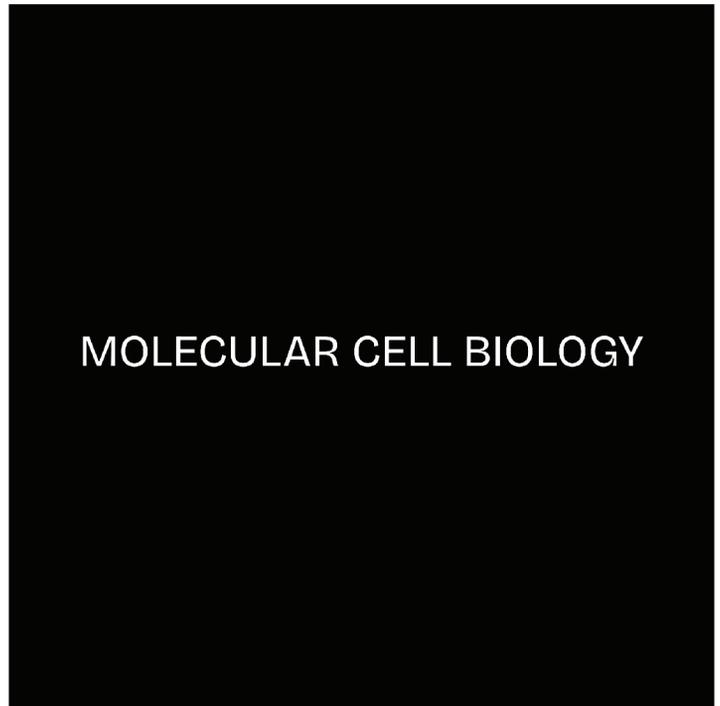
3 Imaging Modes, One Camera, Zero Misalignment

Switch between imaging modes - brightfield (BF), widefield fluorescent (WF) or confocal (CF) - without losing your field of view. All images come from the same region for perfect alignment and reproducible results.

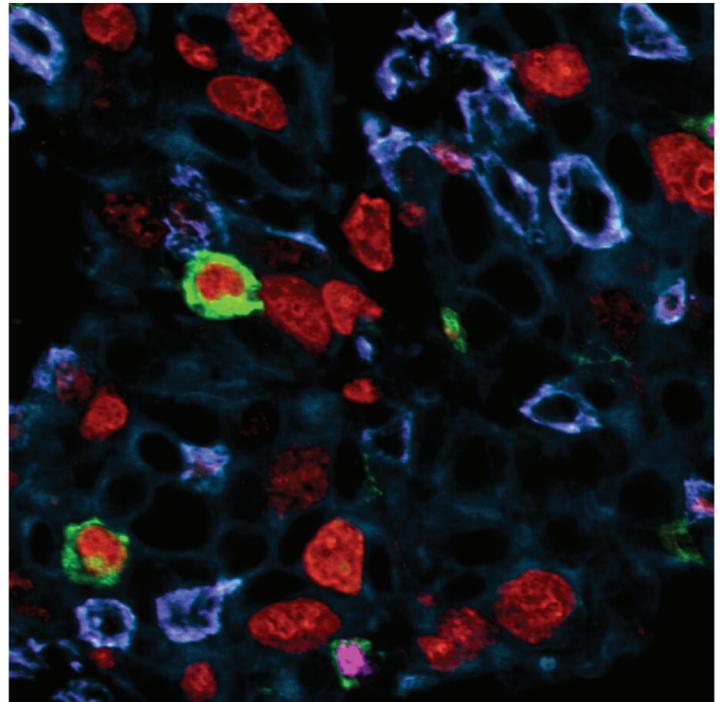
Applications



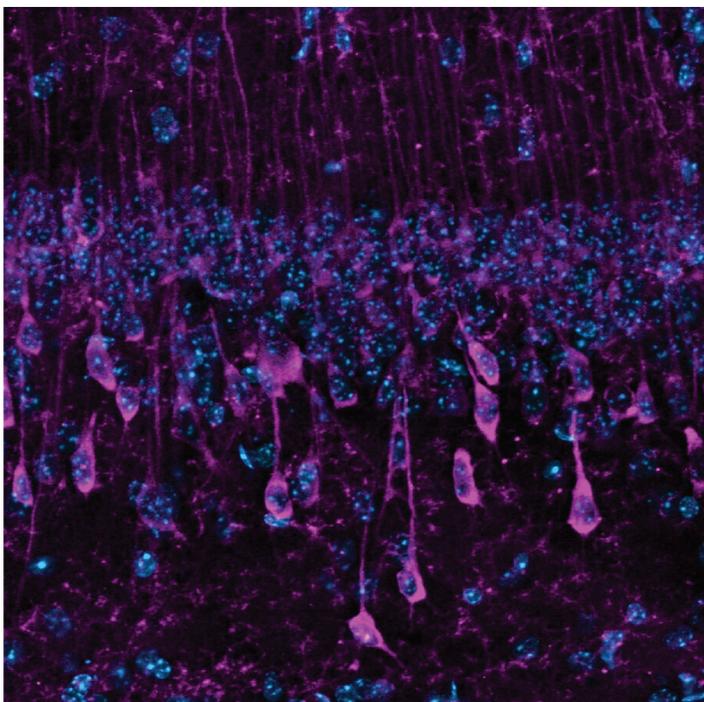
MOLECULAR CELL BIOLOGY



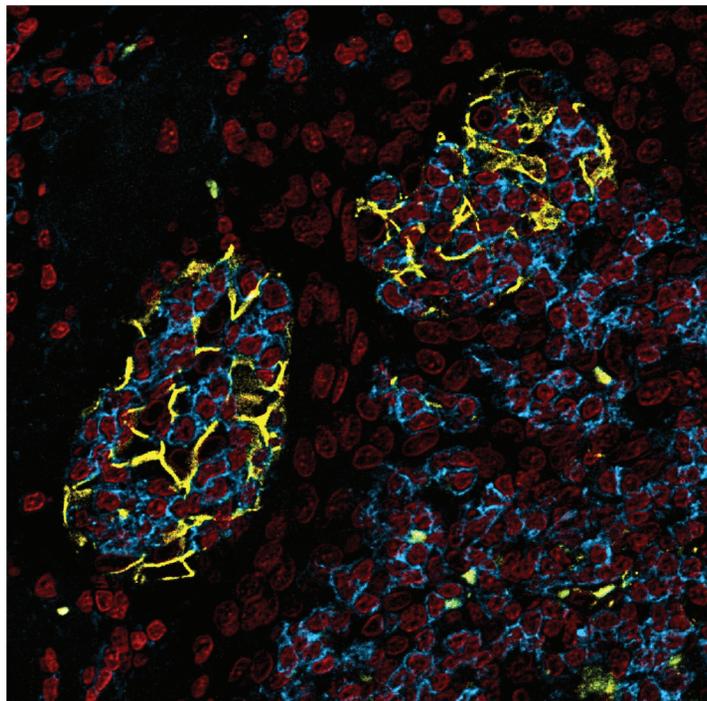
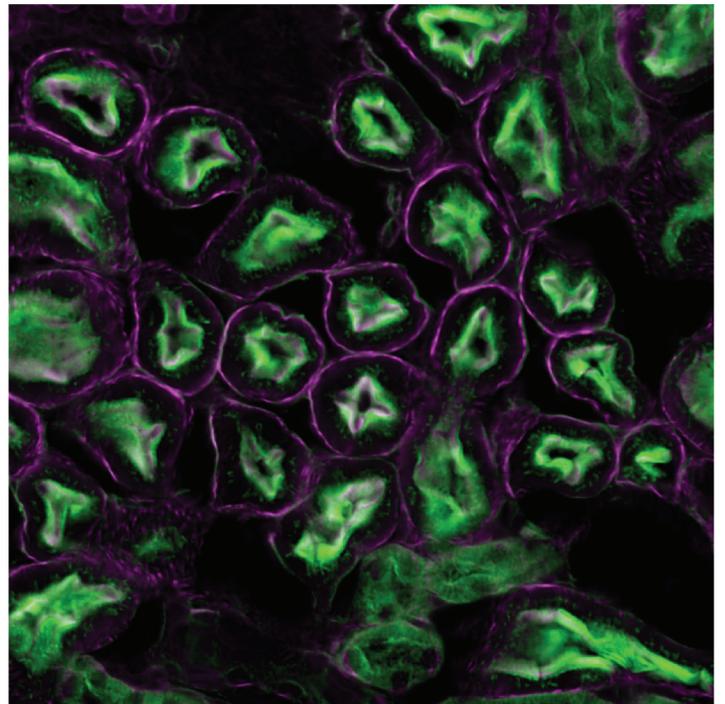
CANCER RESEARCH



NEUROSCIENCE

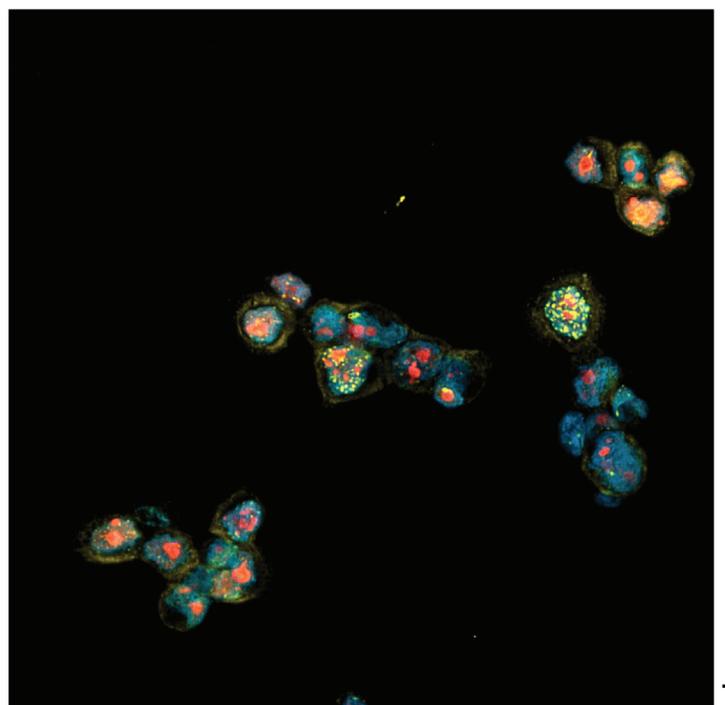


BIOMEDICAL RESEARCH



IMMUNOLOGY & INFECTIOUS DISEASES

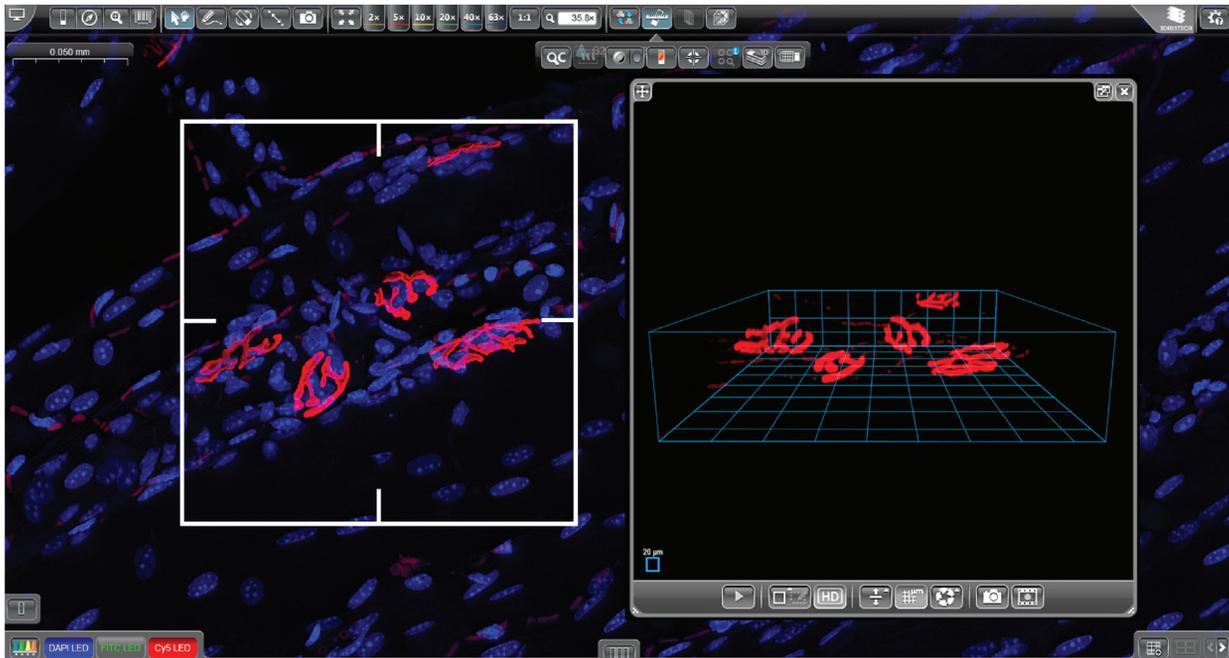
PHARMACOLOGY & TOXICOLOGY



Advanced 3-Dimensional Reconstruction Workflow

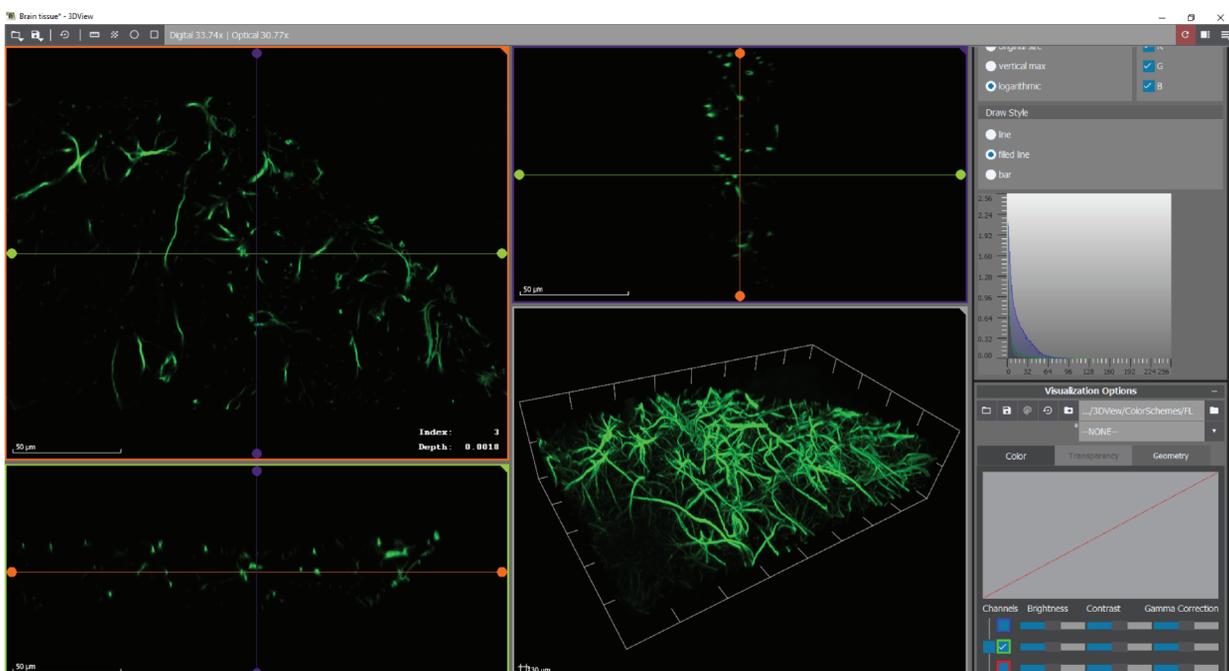
SlideViewer - 3D Reconstruction with one click

SlideViewer's one-click reconstruction instantly generates 3D previews of confocal Z-stacks, enabling rapid assessment of spatial structures without any additional processing.



3DView - In depth Structural Analysis

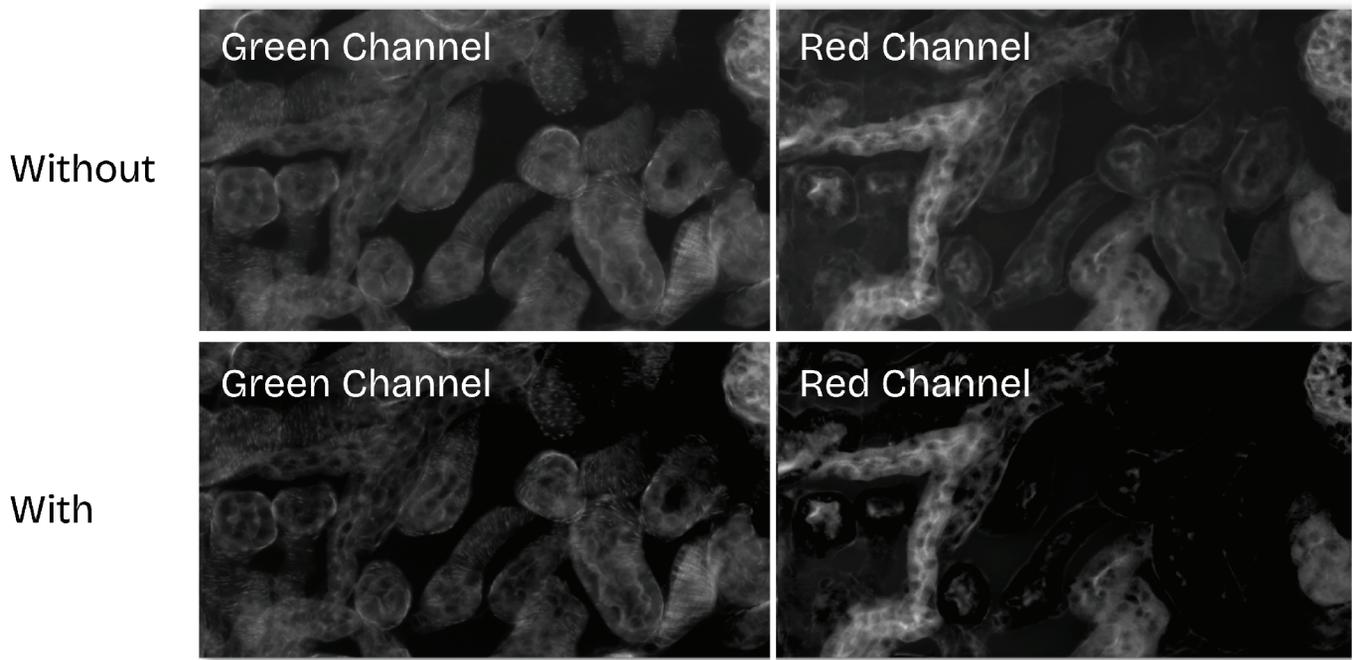
3DView is a high-performance tool for advanced 3D visualization and quantitative analysis, offering slicing, measurements, and detailed exploration of reconstructed volumes.



Advanced Imaging

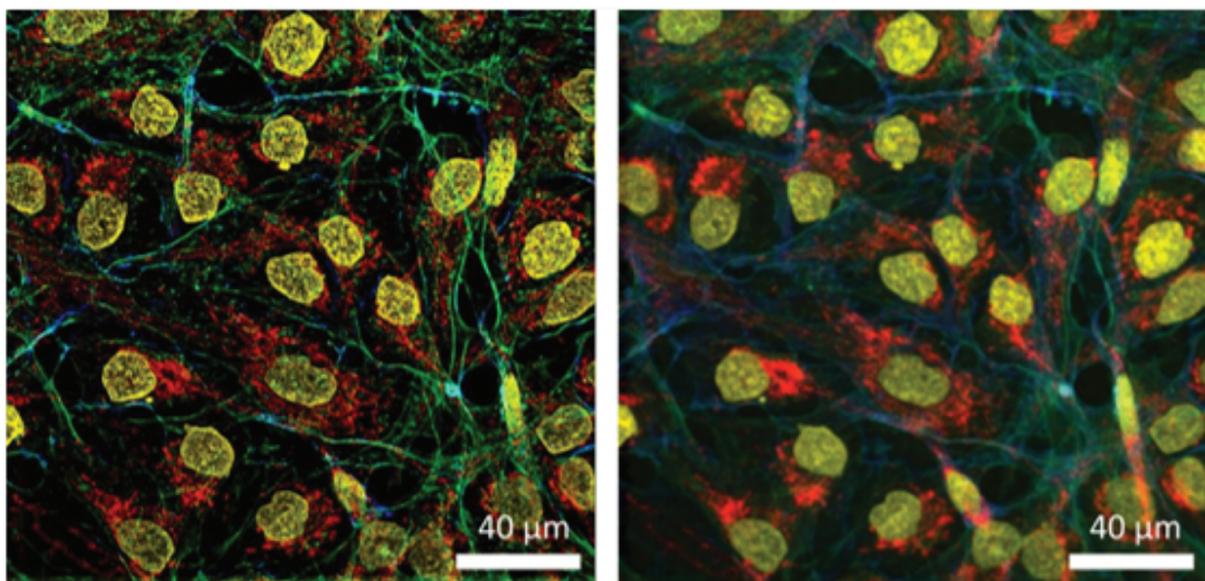
Spectral Unmixing

Separate overlapping fluorophore signals to reveal clean, channel-specific data—ideal for densely labeled, multi-marker experiments.

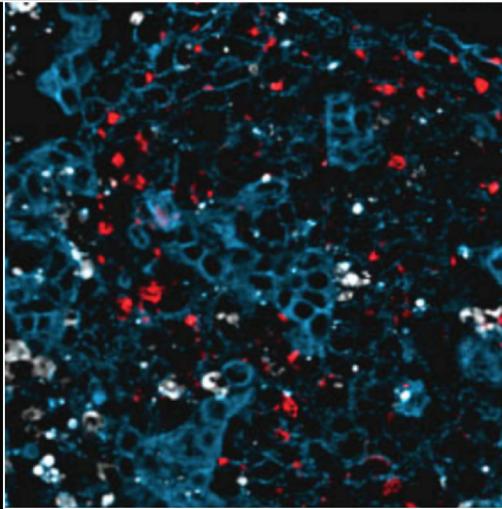


Deconvolution

Algorithmic point-spread-function (PSF) correctionsharpens optical blur, improving contrast and axialresolution for clearer 3D structures.



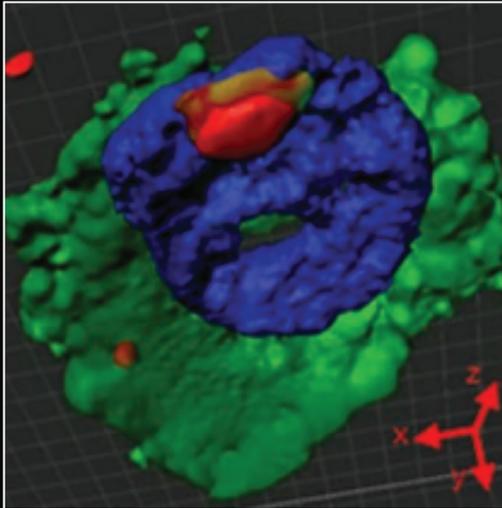
Pannoramic Confocal 40xW (Rebenku et al. 2022)



WITH THE PANNORAMIC CONFOCAL NIELSEN ET AL. VISUALIZED CA9, CLEAVED CASPASE-3, AND MRC2, REVEALING SPATIAL PATTERNS OF HYPOXIA AND APOPTOSIS IN MULTICELLULAR TUMOR HETEROSPHEROIDS.



NIELSEN ET AL.
FRONTIERS IN
ONCOLOGY 14
(2024)

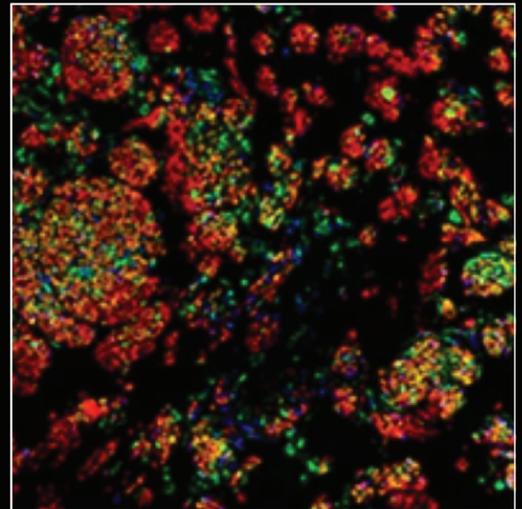


BELLAT ET AL. USED THE PANNORAMIC CONFOCAL TO REVEAL THE LOCALIZATION OF SELF-ASSEMBLING PEPTIDE NANOFIBERS INSIDE AND BETWEEN TUMOR CELLS, ENABLING PRECISE, MULTICHANNEL 3D MAPPING OF NANOSCALE DRUG-DELIVERY PATHWAYS.



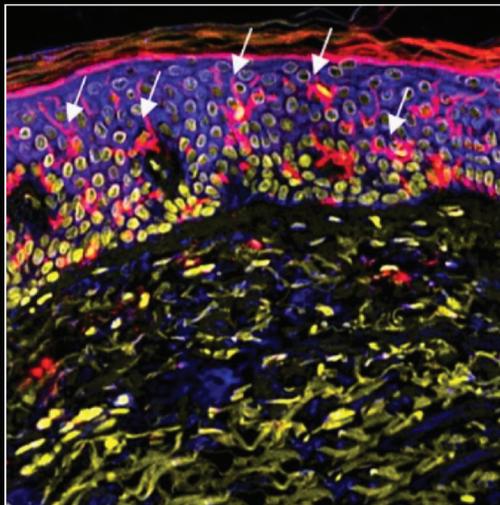
BELLAT ET AL.
ADVANCED
FUNCTIONAL
MATERIALS 28.44
(2018)

Turning Samples into Discoveries



THE SYSTEM PROVIDED PRECISE FLUORESCENCE IMAGING OF AXONS (RED), MYELIN (GREEN), AND CELL NUCLEI (BLUE) IN TRANSVERSE NERVE GRAFT SECTIONS, ENABLING IN-DEPTH INVESTIGATION OF AXONAL DENSITY AND REGENERATION PATTERNS.

THE PANNORAMIC CONFOCAL ENABLED ACCURATE VISUALIZATION OF NPR1-POSITIVE KERATINOCYTES (BLUE) AND CD1A-EXPRESSING LANGERHANS CELLS (RED), SUPPORTING IN-DEPTH ANALYSIS OF EPIDERMAL IMMUNE CELL DYNAMICS.



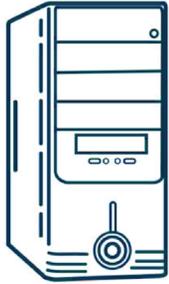
HORVÁTH ET AL.
FRONTIERS IN
IMMUNOLOGY 16
(2025)



ZHANG ET AL. STEM
CELL RESEARCH &
THERAPY 13.1 (2022)

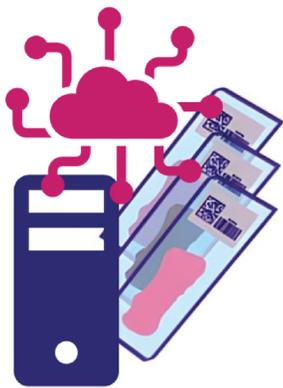


The Infrastructure Behind Every Discovery



High Performance Workstation

A high-performance dedicated workstation ensures fast data processing, smooth multi-channel confocal visualization, and reliable operation even with large Z-stacks and 3D reconstructions – providing an optimized hardware environment for the entire workflow.



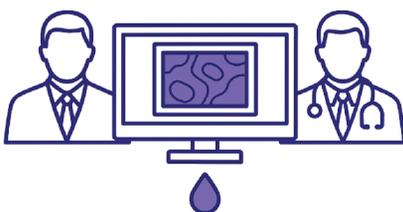
All-in-One Server Solution

An integrated server environment running on the scanner's workstation, providing immediate access to SlideManager, SlideMaster, and SimpleSlideInterface for streamlined slide management, conversion, and interoperability.



DICOM Export - Seamless Integration with Clinical Systems

Convert and save confocal images in standard DICOM format for smooth interoperability with hospital PACS systems. Ensures consistent archiving, documentation, and cross-platform accessibility.



Teleconsultation

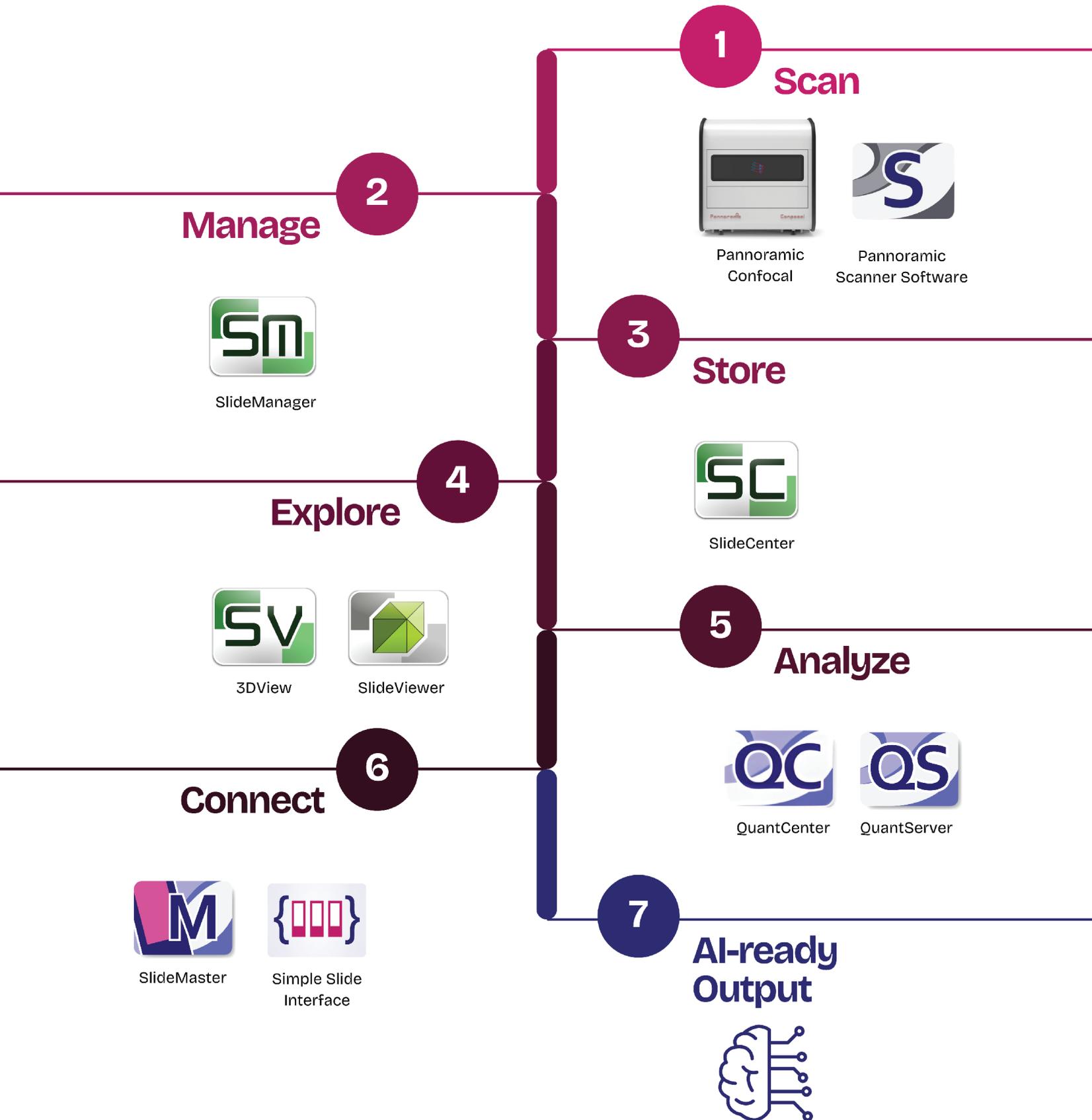
Teleconsultation - Expertise Anywhere

Securely share high-quality images for real-time remote collaboration. Teleconsultation enables rapid second opinions and team-based decision-making, regardless of location.

The 3DHISTECH Ecosystem

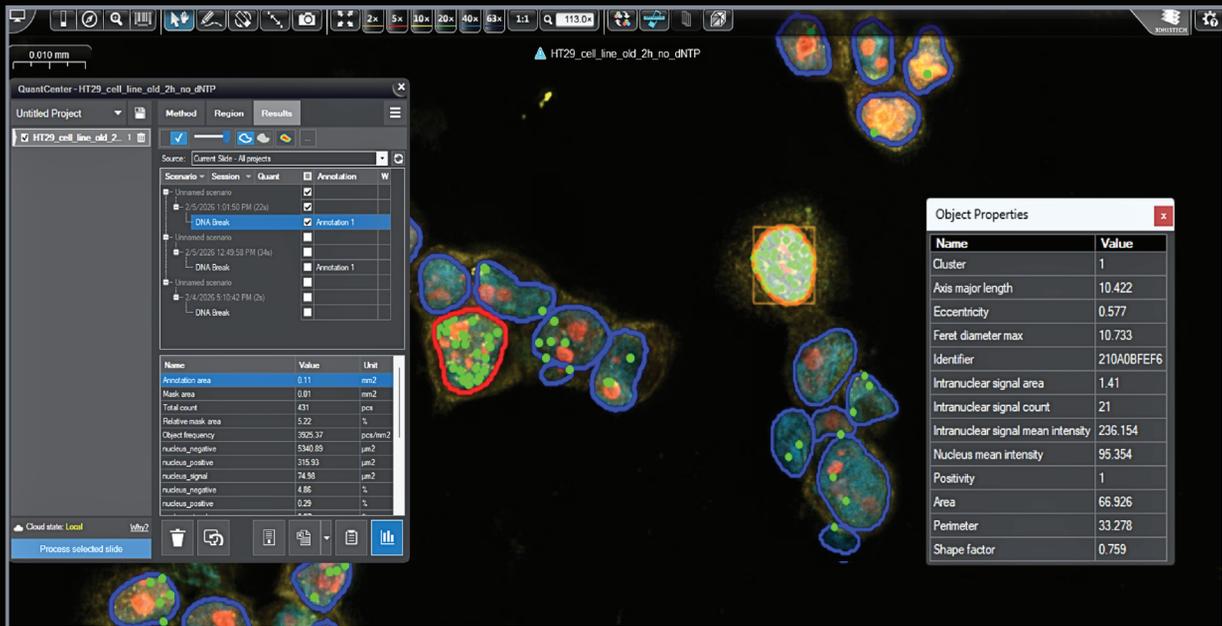


A seamless, integrated ecosystem that fits effortlessly into your existing workflow.





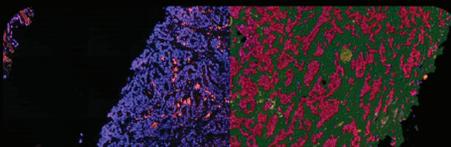
DNABreakQ automatically detects and quantifies γ H2AX foci — providing fast, reliable measurement of DNA double-strand breaks.



Unlock deeper insights with our expanding portfolio of Quant modules - each designed for a specific analysis task. Combine them to create the image-analysis workflow that matches your research needs.

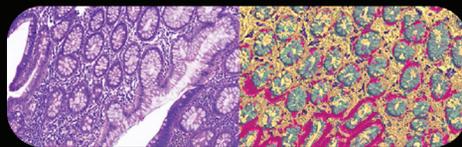
HistoQuant

Her2-Cep17 DNA stained breast tissue classification



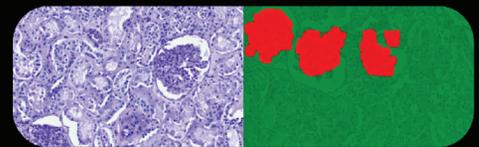
PatternQuant

Elongated villous structure with multi-layered nuclei analysis



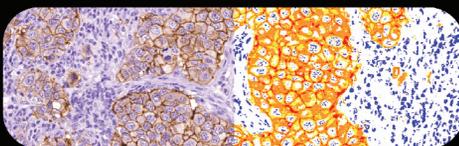
PatternQuantPlus

Analysis of a low-contrast sample



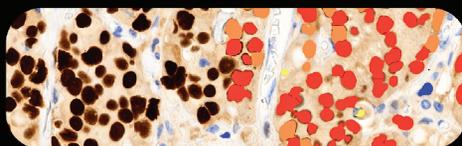
DensitoQuant

Her2 stained breast tissue analysis



NuclearQuant

Nuclei quantification in estrogen stained breast tissue



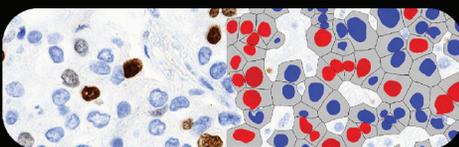
MembraneQuant

Cell membrane analysis in Her2 stained breast tissue



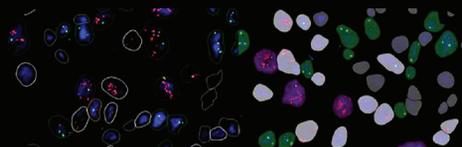
CellQuant

Ki67 nuclei classification by cytoplasmic environment



FISHQuant

Her2-Cep17 stained FISH sample analysis



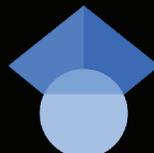
CISHQuant

CISH sample analysis



SCRIPTQUANT

Nuclei detection by user-defined Python code



Trusted in 1,000+ scientific papers worldwide

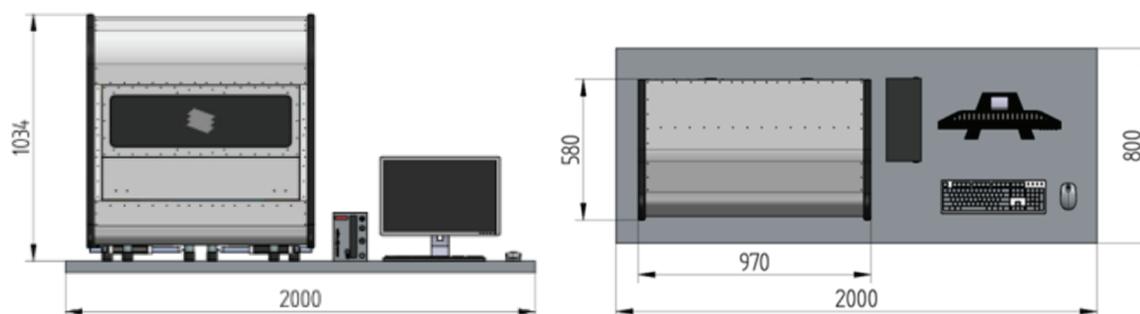
Cutting-Edge Research Enabled by Panoramic Confocal

TOP 15 Selected Publications

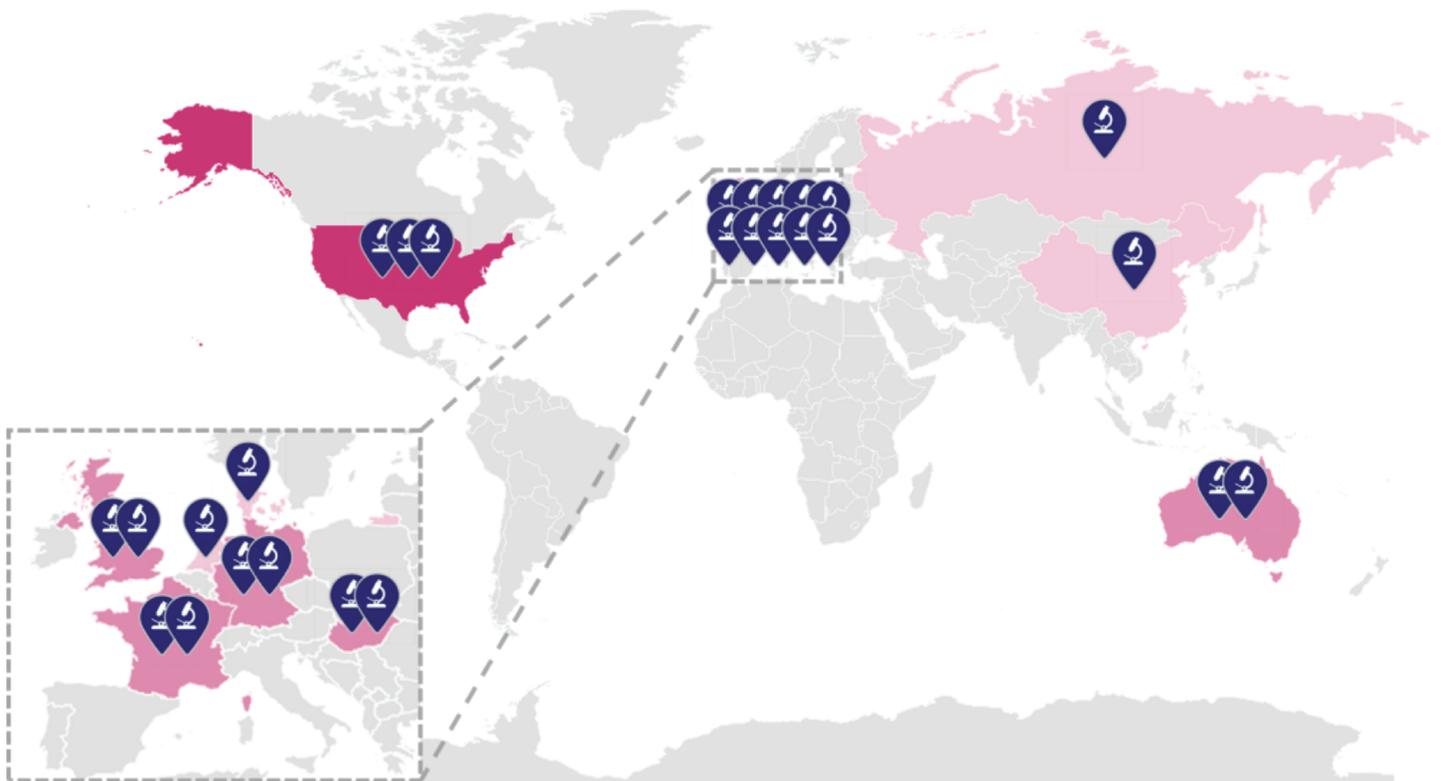
1. Kelava et al. Androgens increase excitatory neurogenic potential in human brain organoids. Nature (2022) <https://doi.org/10.1038/s41586-021-04330-4>
2. Lee et al. Synthetic Lethal and Convergent Biological Effects of Cancer-Associated Spliceosomal Gene Mutations. Cancer Cell (2018) <https://doi.org/10.1016/j.ccell.2018.07.003>
3. Kim et al. TNF-NF- κ B-p53 axis restricts in vivo survival of hPSC-derived dopamine neurons. Cell (2024) Hayashi et al. A unifying paradigm for transcriptional heterogeneity and squamous features in pancreatic ductal. Nature cancer (2020) <https://doi.org/10.1016/j.cell.2024.05.030>
4. Er et al. Pericyte-like spreading by disseminated cancer cells activates YAP and MRTF for metastatic colonization. Nature Cell Biology (2018) <https://doi.org/10.1038/s41556-018-0138-8>
5. Szebényi et al. Human ALS/FTD brain organoid slice cultures display distinct early astrocyte and targetable neuronal pathology. Nature Neuroscience (2018) <https://doi.org/10.1038/s41593-021-00923-4>
6. Bellat et al. Functional Peptide Nanofibers with Unique Tumor Targeting and Enzyme-Induced Local Retention Properties. Advanced Functional Materials (2018) <https://doi.org/10.1002/adfm.201803969>
7. Schwartzman et al. Oncogenic IDH mutations increase heterochromatin-related replication stress without impacting homologous recombination. Molecular Cell (2023) <https://doi.org/10.1016/j.molcel.2023.05.026>
8. Brasko et al. Intelligent image-based in situ single-cell isolation. Nature Communications (2018) <https://doi.org/10.1038/s41467-017-02628-4>
9. Kim et al. Nanosensor-based monitoring of autophagy-associated lysosomal acidification in vivo. Nature Chemical Biology (2023) <https://doi.org/10.1038/s41589-023-01364-9>
10. Shan et al. Three-dimensional-printed strontium-incorporated β -TCP bioceramic triply periodic minimal surface scaffolds with enhanced angiogenic and osteogenic properties. Regenerative Biomaterials (2025) <https://doi.org/10.1093/rb/rbaf080>
11. Yi et al. Deleting fibroblast growth factor 2 in macrophages aggravates septic acute lung injury by increasing M1 polarization and inflammatory cytokine secretion. Molecular Biomedicine (2024) <https://doi.org/10.1186/s43556-024-00203-0>
12. Hoppe-Seyler et al. Induction of dormancy in hypoxic human papillomavirus-positive cancer cells. PNAS (2017) <https://doi.org/10.1073/pnas.1615758114>
13. Yang et al. Neuropeptide Y in the medial habenula alleviates migraine-like behaviors through the Y1 receptor. Journal of Headache and Pain (2023) <https://doi.org/10.1186/s10194-023-01596-z>
14. Zhang et al. Functional tissue-engineered microtissue formed by self-aggregation of cells for peripheral nerve regeneration. Stem Cell Research and Therapy (2022) <https://doi.org/10.1186/s13287-021-02676-0>
15. Kalmár et al. Patterns of Somatic Variants in Colorectal Adenoma and Carcinoma Tissue and Matched Plasma Samples from the Hungarian Oncogenome Program. Cancers (2023) <https://doi.org/10.3390/cancers15030907>

Specifications

Imaging Performance	
Operation modes	Whole slide imaging in Brightfield; Widefield fluorescent; Confocal
Illumination	Brightfield: 3CCD-equivalent separated RGB LED
	Fluorescent: 7-channel solid-state light engine (15,000-hour lifetime)
Supported Objectives	Dual-objective support with motorized objective changer.
	Recommended: 20x, 40x, w40x; also available: 10x, w63x
Default Objectives:	Zeiss Plan-Apochromat 20x/0.8 NA
	Zeiss C-Apochromat (W) 40x/1.2 NA (water immersion)
Filter positions	4, compatible with multiband filter cubes
Camera Type	5 Mpx, 16-bit, scientific CMOS camera (low noise: 1.3 e ⁻)
Resolution	Up to 0,10 / 97x
Speed	Fluorescence Scanning Speed: 30 minutes for a 15 mm x 15 mm sample with 3 fluorescent channels at 20 ms exposure per channel.
Software	
Software package	RX solution software package: Control SW for scanner + Viewer + Server-side software + Quantifications
Data Handling & Export Options	
Digital Slide Format	Proprietary MRXS (lossless or JPEG2000 encoding), DICOM
Export Formats	Multi-channel or single-channel TIFF, JPEG, PNG, BMP
3D Image Export	Compatible with third-party 3D analysis software
Physical Specifications	
Dimensions (W x D x H):	97 cm x 58 cm x 103 cm (39" x 23" x 41")
Weight:	90 kg
Power (input / consumption)	100–240 V AC, 50/60 Hz
Package includes	Confocal scanner unit, FL light engine; Control PC; Slide checker tool; 2x Slide holding tray; Monitor (optional)
Slide Handling	
Capacity	Up to 12 Slides
Compatible Slide Formats	25.5 mm x 75.5 mm, 1 mm thickness
Cover glass thickness	0.14-0.19
Barcode reading	1D/2D: Code39, Code128, QR, Data Matrix



Pannoramic Confocal Digital Scanners in the world by 2025



© Australian Bureau of Statistics, GeoNames, Microsoft, NavInfo, Open Places, OpenStreetMap, Overture Maps Foundation, TomTom, Wikipedia, Zenrin



As Europe's first company focused solely on digital pathology, 3DHISTECH has been shaping the future of whole slide imaging for over three decades. Its integrated solutions, spanning high-performance whole-slide scanners, intelligent analysis software, and advanced confocal technologies optimize workflows for professionals across research, and clinical practice worldwide.



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