

From Eye to Insight



## ADVANCED IMAGING. SIMPLIFIED.

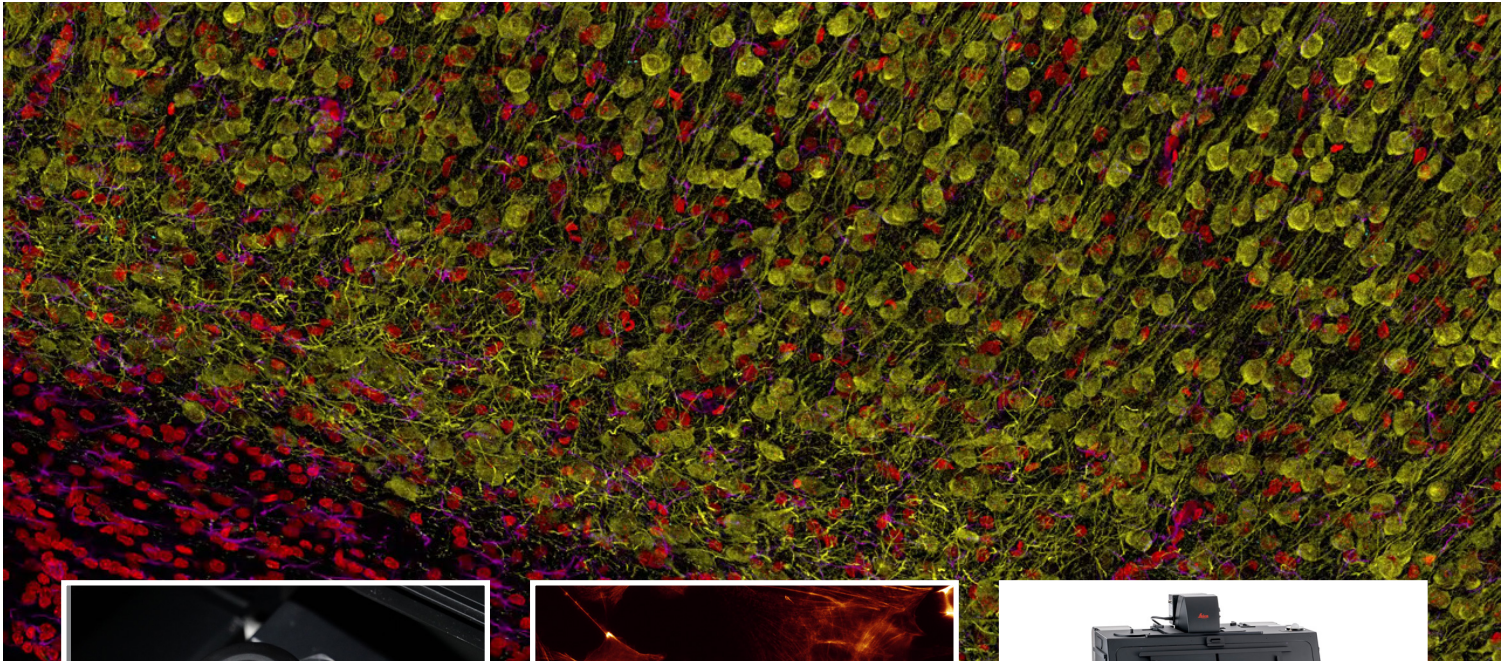
Inverted Microscope DMI8



## DMi8

# STREAMLINE YOUR WORKFLOWS

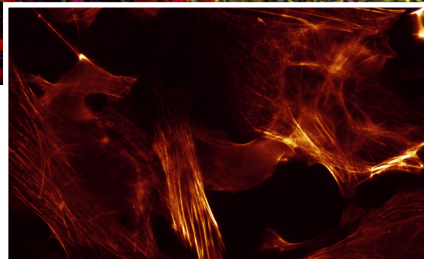
With the DMi8 inverted microscope you can reliably generate high-quality data with solutions you can tailor to your research requirements and budget. Building on our history of intelligent automation, the DMi8's expanded functionality fundamentally improves the user experience.



### ADVANCED AUTOMATION TO EFFICIENTLY PERFORM COMPLEX WORKFLOWS

Let your data speak, and focus on your experiment, not the system. Gaining deeper insights becomes simple with game-changing technology.

> page 3



### TRUST YOUR RESULTS WITH HIGHER QUALITY IMAGE DATA AND ANALYSIS

Capture more convincing and reproducible data from demanding 3D and live samples with a fraction of the effort.

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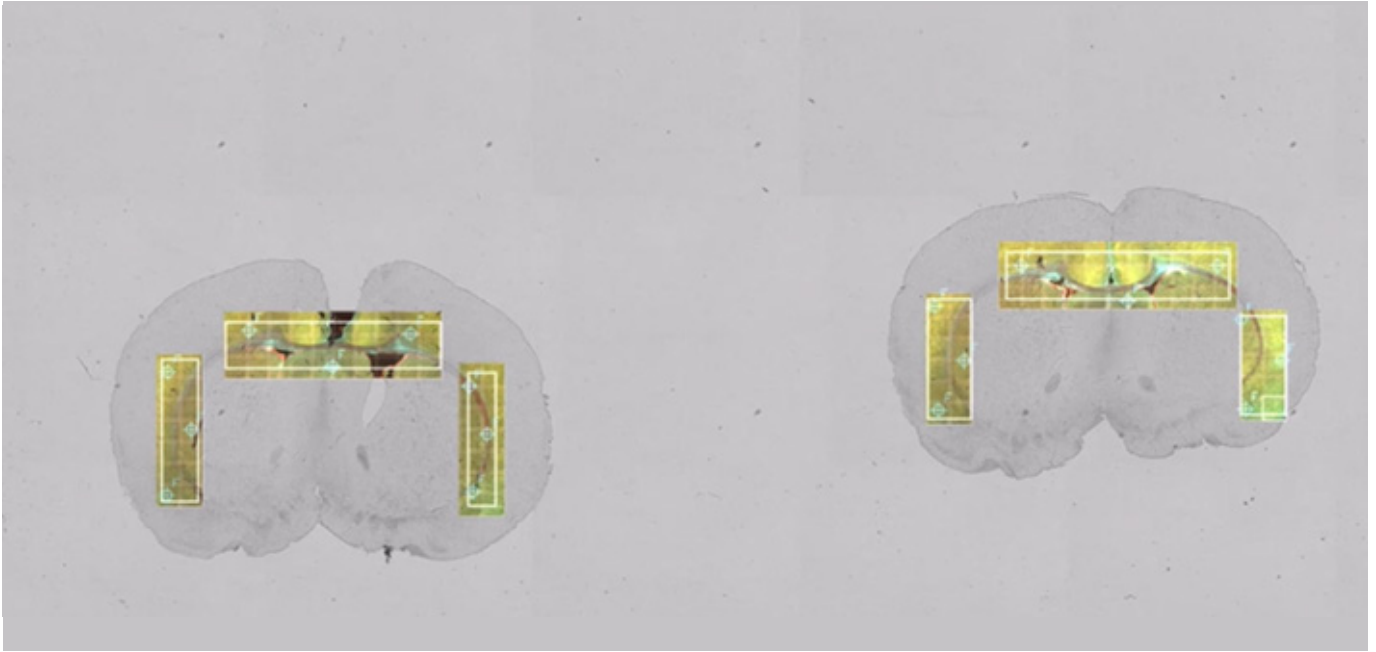
### FLEXIBLE TAILORED SOLUTIONS

Customize your system to your needs and budget today, with upgrade options to support your evolving research requirements.

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# ADVANCED AUTOMATION TO EFFICIENTLY PERFORM COMPLEX WORKFLOWS



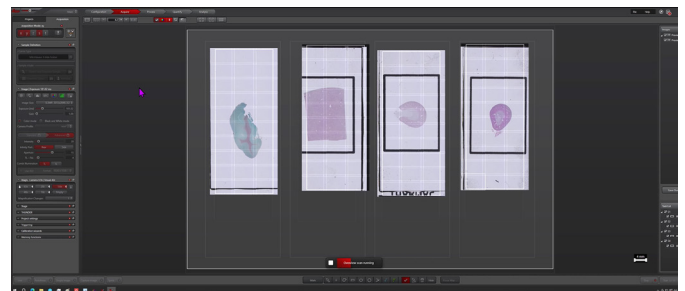
Multi-channel fluorescent images acquired in regions overlaid on top of overview image

## AUTOMATED SAMPLE FINDER

With the new sample finder functionality, you can quickly gain a comprehensive view of your specimen and put your data into context by understanding where specific data sets have been acquired from.

Simply place your carrier on the stage and generate an in-focus overview of the entire sample at the click of a button with Automated Sample Overview.

Now you can eliminate the time and frustration of searching for a focused image, as the autofocus automatically detects your cover slip surface, reducing effort and your time to result.

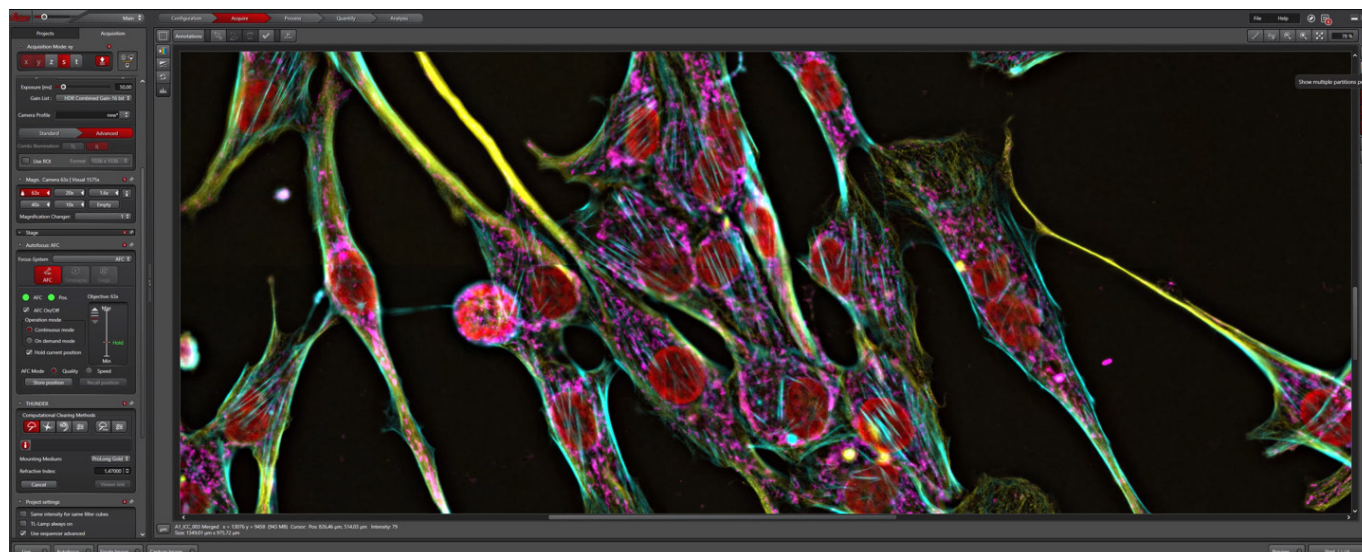


Sample finder overview images of multi-slide holder

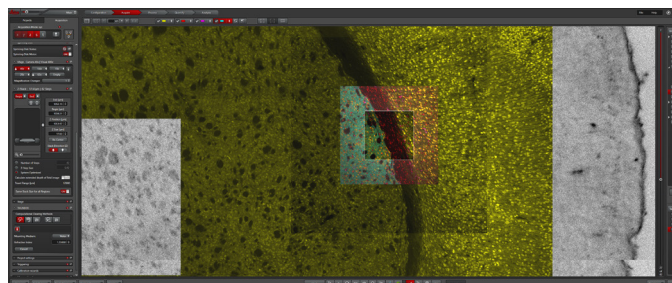
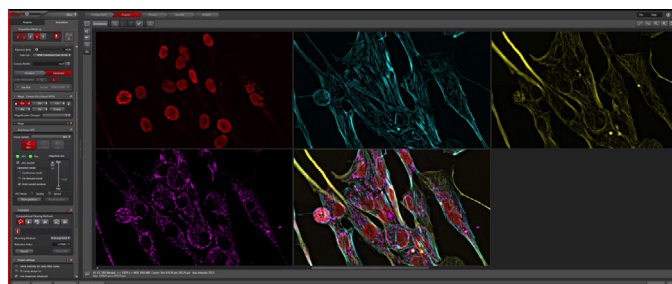
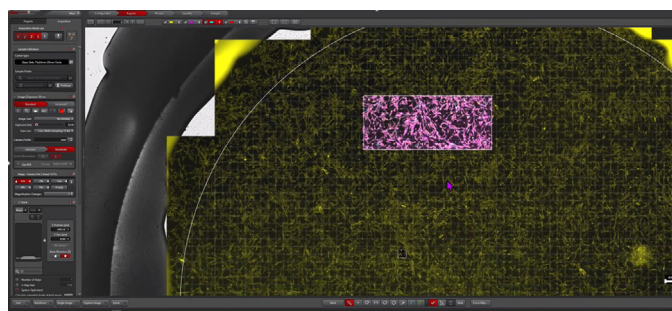


Setting up a multi-well assay via Navigator interface

# ADVANCED AUTOMATION



Navigator view



Flexible viewing tools allow you to switch between contextual overviews and high-resolution single-channel views, enabling full data exploration.

## ENHANCED NAVIGATOR INTEGRATION

Move through your experiments with ease with the new fully integrated Navigator experience.

Easily switch from sample overview images to multi-channel view mode, giving your data spatial context throughout your workflow.

With the enhanced integration of Navigator, you can set up and perform complex multi-position experiments on a wide range of sample formats using templates for slides, dishes multi-well plates and more.

Combining Navigator and sample finder with Adaptive Immersion creates the ultimate synergistic workflow. This powerful combination allows you to identify key regions of interest (ROIs) from low magnification sample overviews and transition to high-resolution imaging with immersion objectives, all while keeping the sample on the stage. This puts your high-resolution datasets into accurate spatial context.



# ADVANCED AUTOMATION

## ADAPTIVE IMMERSION TECHNOLOGY

Our patented Adaptive Immersion technology creates smoother workflows through hassle-free switching to immersion objectives, enabling you to use optimum water immersion objectives for live cell experiments under physiologically relevant conditions.

Eliminate the frustration of flooding an unattended microscope or losing immersion during long duration experiments. The Adaptive Immersion cap features an embedded sensor that continuously monitors and maintains immersion throughout your experiments. This prevents wasted time spent adjusting flow rates on auto immersion pumps through trial and error.



Adaptive Immersion pump

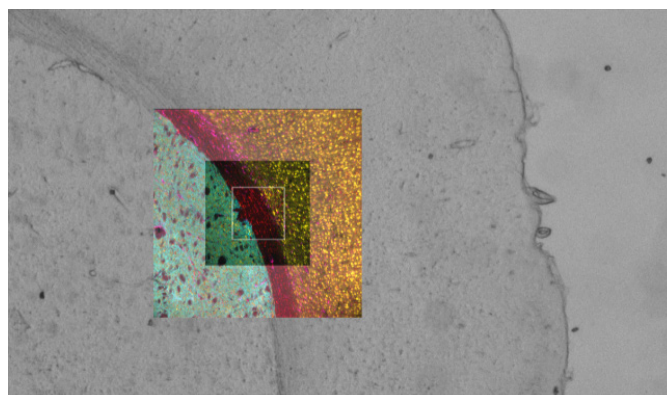
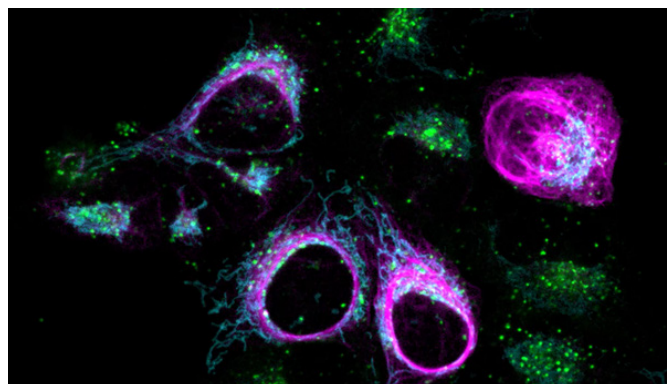


Image overlays from 1.6x overview, 10x single channel tile scan multi-channel 20x image and 40x Adaptive Immersion image



Adaptive Immersion in action

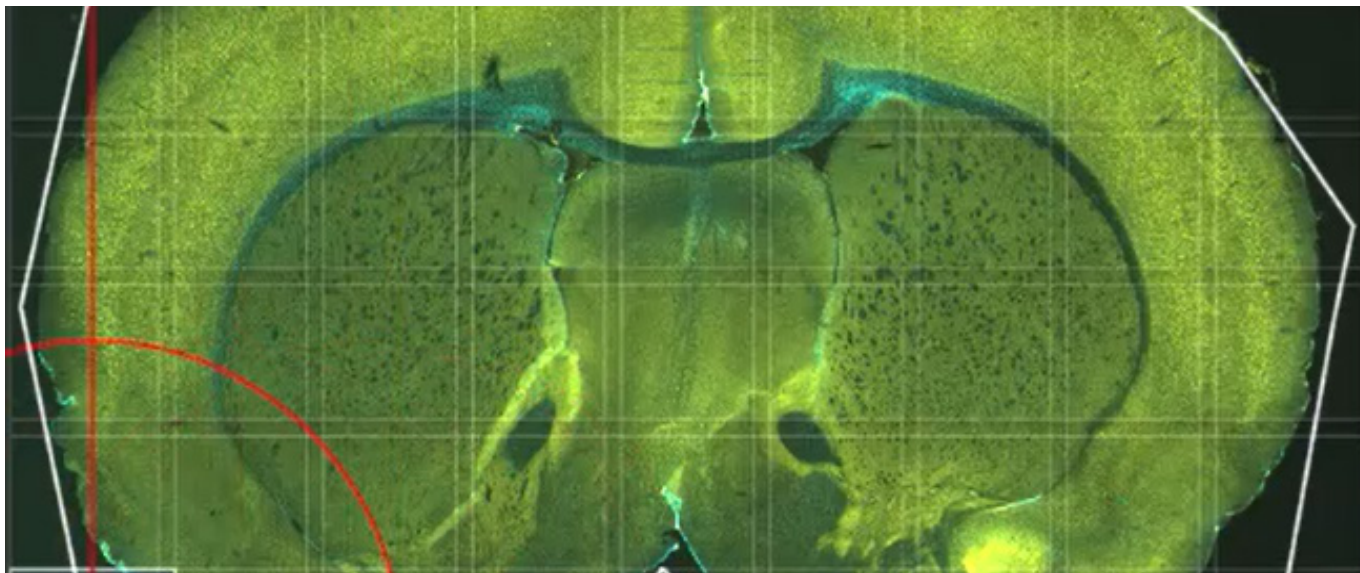


Live cell image acquired with Adaptive Immersion



Adaptive Immersion sensor cap

## ADVANCED AUTOMATION

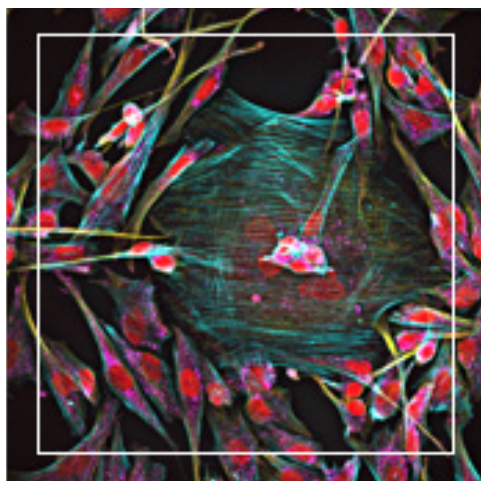


Larger 22 mm FOV results in >30% fewer tiles required to scan the same area saving significant time

## CONFIDENTLY GAIN MORE INSIGHTS

Research requires an ever-increasing number of statistically relevant results with spatial context, obtained from multi-dimensional samples. These requirements place greater demands on microscopy platforms to deliver higher volumes of data. The DMI8 offers a range of options to maximize your system throughput, enabling you to collect the large volumes of data necessary to unlock your next discovery.

- > Optimize your system efficiency through synchronization of all hardware components with microsecond precision, using synapse hardware triggering.
- > Accelerate large area scanning and multi position experiments with the high precision Quantum stage.
- > Reduce your time to result and increase the likelihood of capturing rare live events. Our enhanced 22 mm field of view (FOV) optics now enable high performance, large format cameras to be used, allowing you to collect more data from your sample.



Comparative FOV 19 mm vs. 22 mm



New 22 mm optics enable the DMI8 to utilize the full sensor area of high-performance cameras like the Teledyne Kinetix22



# TRUST YOUR RESULTS WITH HIGHER QUALITY IMAGE DATA AND ANALYSIS

## CONVINCING DATA FROM 3D SAMPLES

Generate high quality data every time regardless of your experience level. The DMI8 enables you to extract more insights from your 3D samples with our advanced technology suite including:

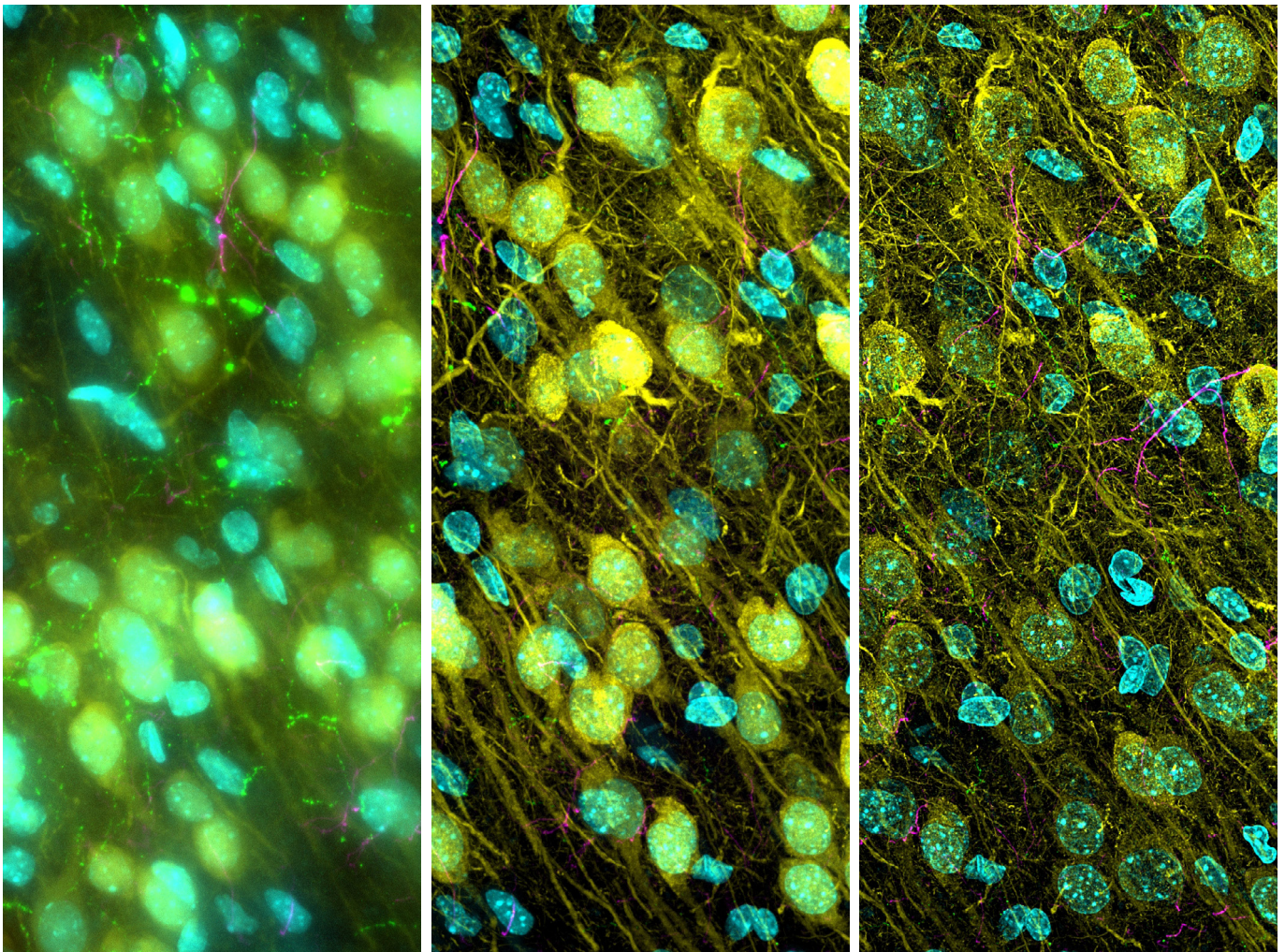
**THUNDER** - See through the haze with Computational Clearing.

**SmartCORR** - Optimize your optical settings at the click of a button.

**Spinning Disk Confocal powered by THUNDER** - See deeper into your sample with high-speed confocal imaging.

**TIRF** - Image live cell events down to single molecules.

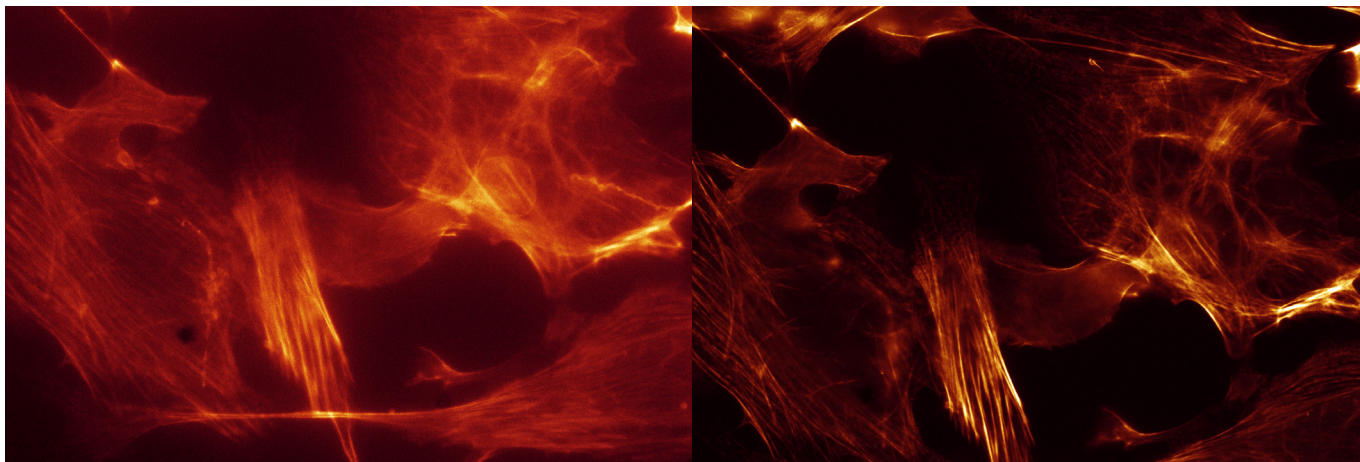
**AIVIA** - Use advanced AI image analysis tools to extract deeper insights from your image data.



Rat brain stained with Hoechst, CPCA-GFAP, Fox/NeuN, RPCA-TH slide provided by EnCor Biotechnology Inc. (RBC101223) imaged in widefield, spinning disk and THUNDER spinning disk.



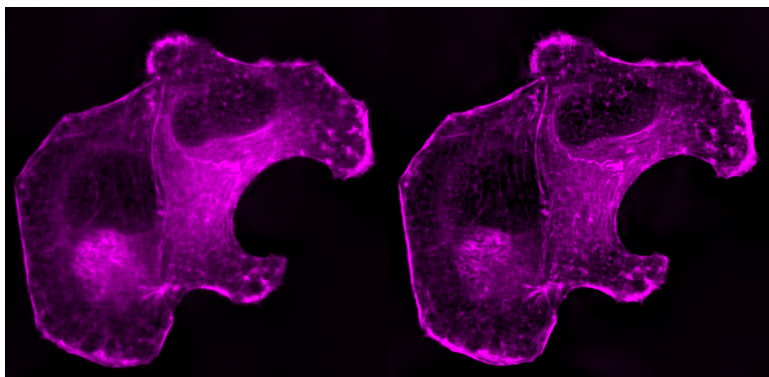
## TRUST YOUR RESULTS



Cells stained for actin with Alexa Fluor(R) 488 Phalloidin. Actin network was acquired before (left) and after (right) SmartCORR adjustment.

## PRECISE AND REPRODUCIBLE LIVE CELL DATA WITH SMARTCORR

Extract better data from your sample in seconds with SmartCORR, which automatically optimizes your objective's correction collar settings to match your experiment. This significantly improves image quality by reducing spherical aberrations, giving you the best possible data every time. Now you can save the time and frustration of making small adjustments to your microscope and reduce the impact of human error on your data. For enhanced live cell imaging, combine SmartCORR with Adaptive Immersion.



3D image acquired with spinning disk, before (left) and after (right) SmartCORR adjustment.



SmartCORR compatible MotCORR objective

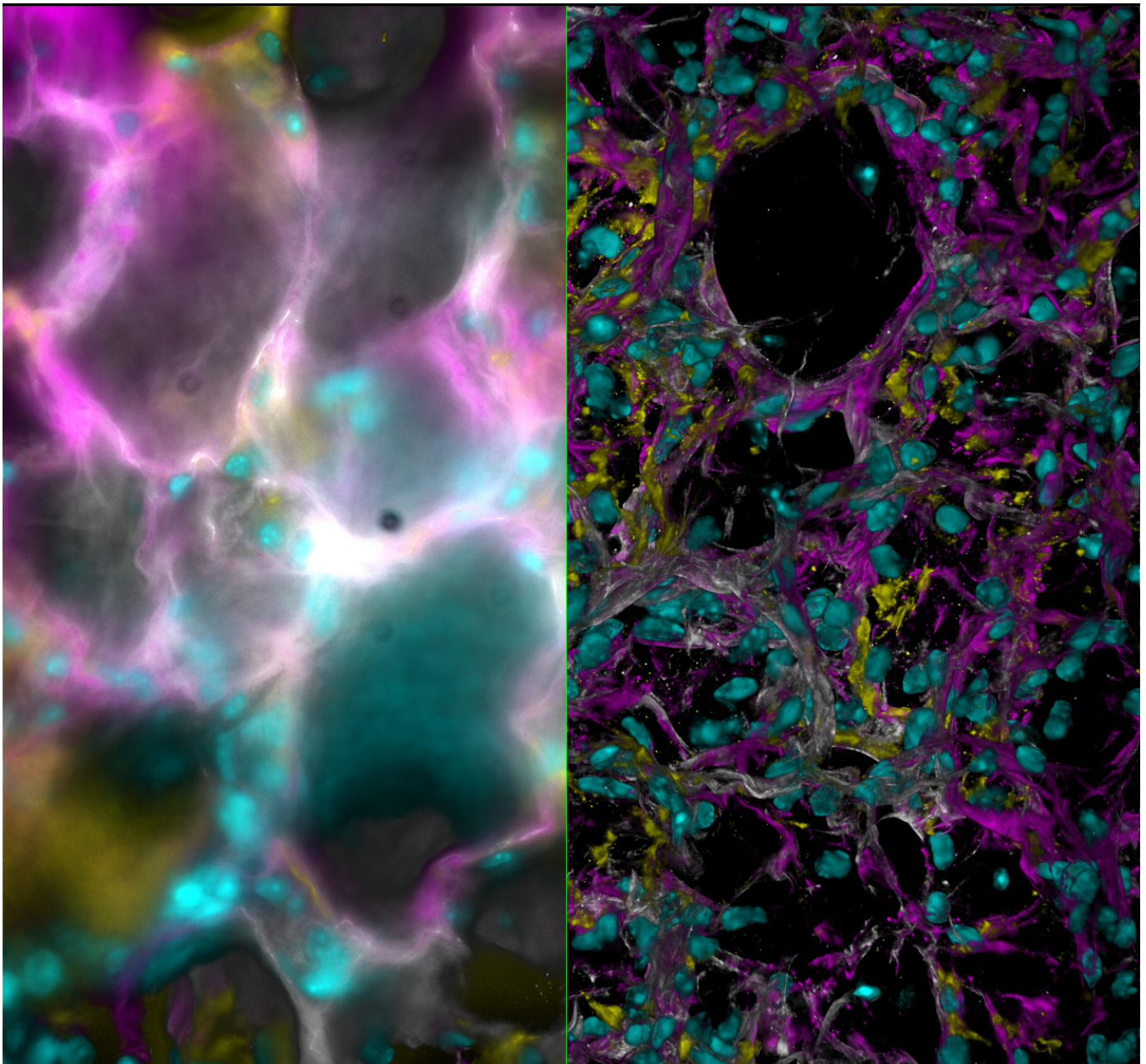


# TRUST YOUR RESULTS

## BEYOND DECONVOLUTION - SEE THROUGH THE HAZE

Elevate your DMI8 image quality with THUNDER, an opto-digital technology that uses the Computational Clearing method to generate high resolution, high contrast images, by removing the out of focus blur inherent to widefield images.

A simple yet powerful real time image enhancement tool, you can use THUNDER on both widefield and spinning disk data sets and see stunning results. With THUNDER Live you can optimize parameters with immediate visual feedback, improving data quality and reducing time to optimal results.



Mouse lung tissue stained for a study of type I alveolar epithelial cell (AT1) biology. Yellow indicates AT1 lineage trace (GFP), magenta the receptor for advanced glycation end products (RAGE), cyan aquaporin 5 (AQP5), and gray nuclei (DAPI). Image courtesy of Yana Kazadaeva, CA, USA.

# FLEXIBLE TAILORED SOLUTIONS

## CUSTOMIZABLE AND UPGRADABLE

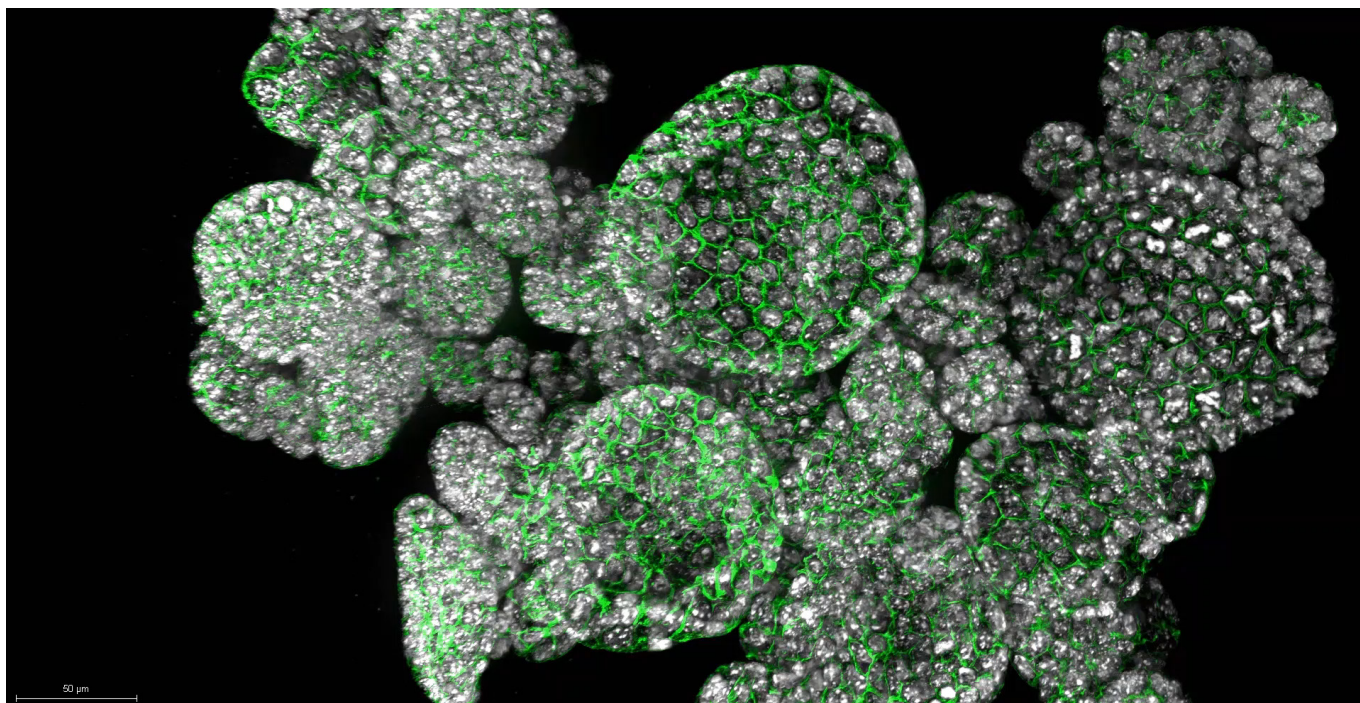
Future-proof your experiments with this adaptable solution. The DMI8's modular structure allows you to tailor your system to fit your current needs and budget. As your research evolves, upgrade your system by adding features such as THUNDER, Adaptive Focus Control (AFC), climate control, TIRF, as well as spinning disk modules.



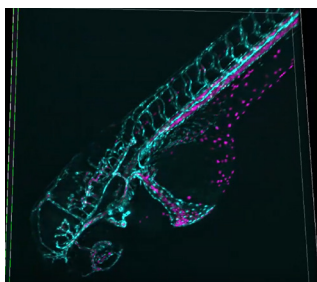


# FLEXIBLE TAILORED SOLUTIONS

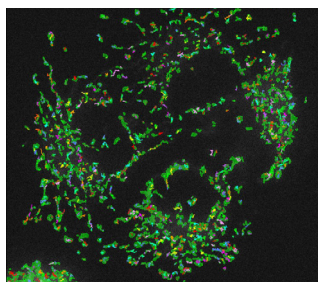
## DMi8 - CUSTOMIZABLE SOLUTIONS FOR A RANGE OF APPLICATIONS



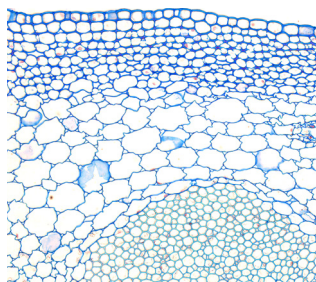
Organoid development, THUNDER image of an organoid cluster. Courtesy M.Sc. Diana Krauß, Medical University of Vienna (Austria) Dapi – NucleusGFP – Plasma Membrane Thickness 100μm 63x objective, 469 Z planes, 2 channels



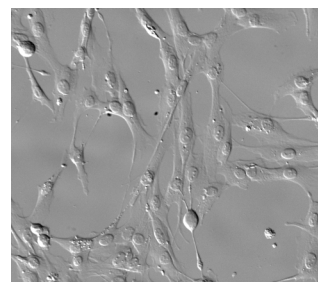
Model Organism, THUNDER spinning disk image of a zebrafish. Sample courtesy of Prof. Dr. Ralf Jacob Philipps University of Marburg



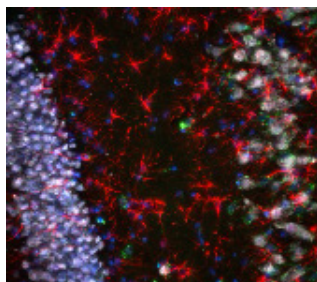
Live cell imaging



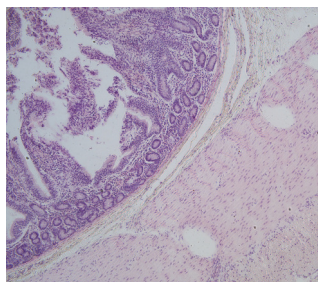
Plant biology



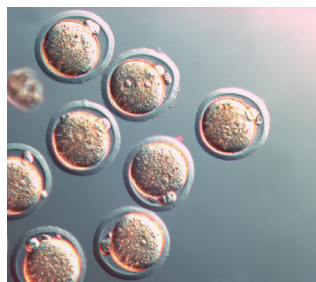
Cell culture



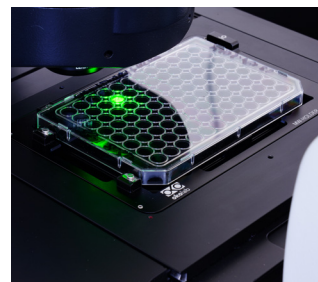
Fluorescent tissue brain



H&E Tissue



Embryology, mouse embryo. Image courtesy of IGBMC, Strasbourg, France



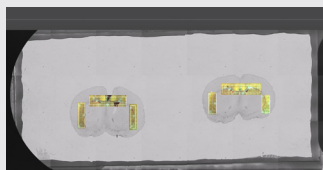
Multi-well plate scanning

# THE ENHANCED DMi8 WORKFLOW

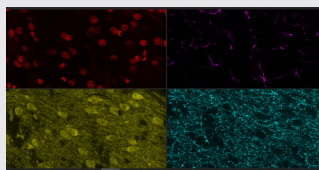
## Efficiently set-up your experiment using advanced automation



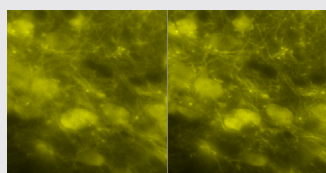
Automatically locate and focus on your sample with **Sample Finder**



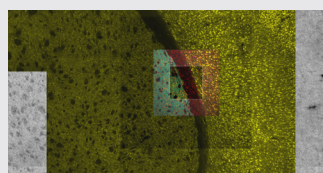
Use low magnification sample overviews to set-up multi-position experiments with **Navigator**



Easily switch to multi-channel view to fine tune channel settings and explore your data with new enhanced **Navigator integration**

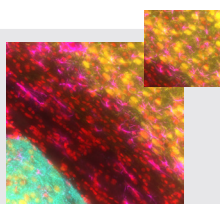


Fine tune your objective settings to match your sample and improve image quality with **SmartCORR**

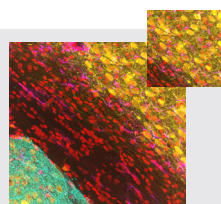


Seamlessly transition to high performance immersion objectives with **Adaptive immersion**.

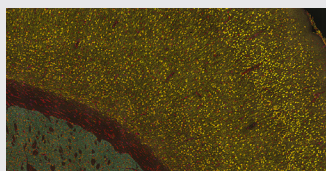
## Access higher quality image data and analysis



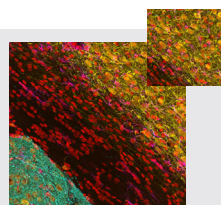
Acquire multi-dimensional z-stacks in **widefield**.



Improve optical sectioning with cicero **spinning disk confocal**.

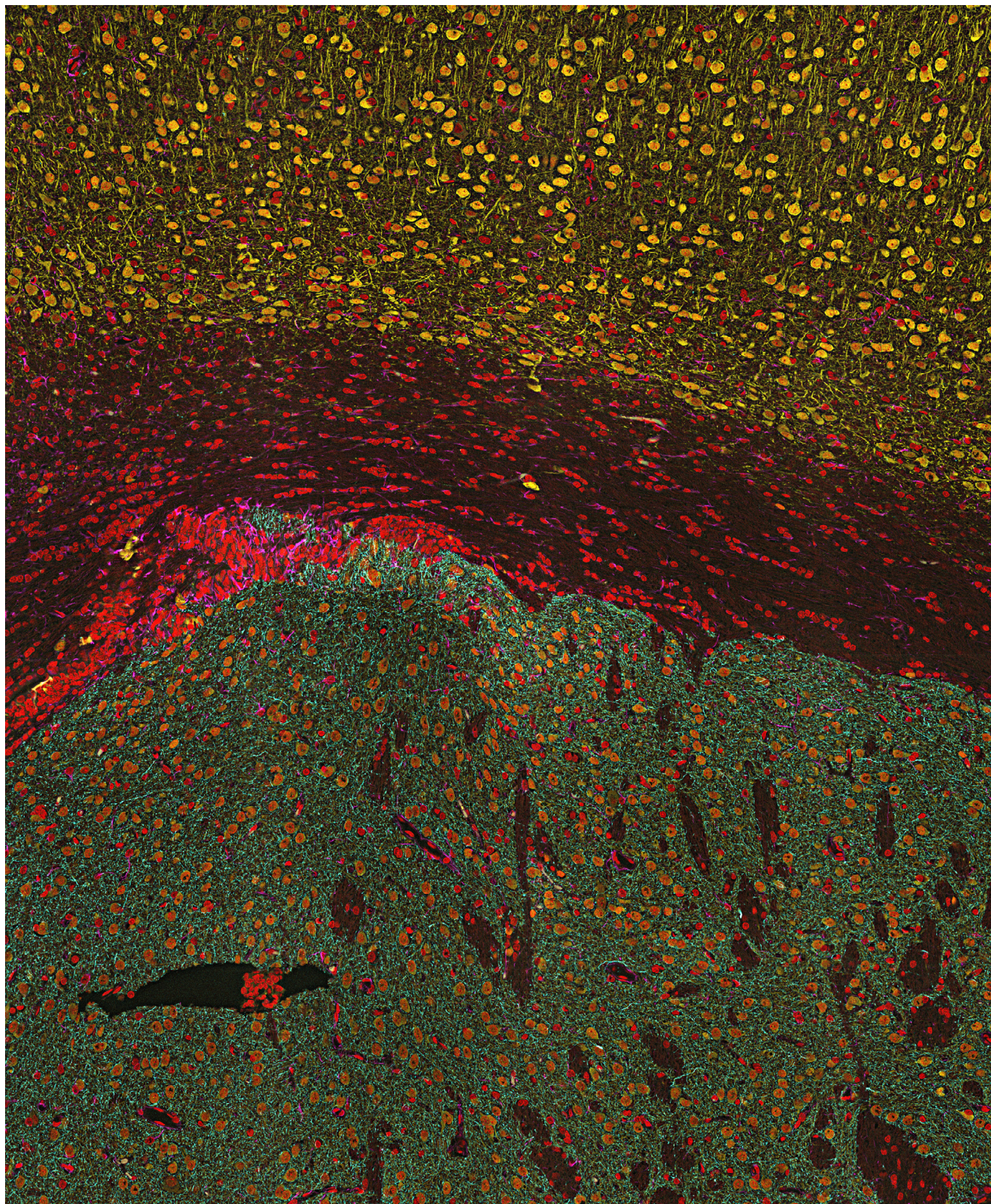


See the full picture by **stitching** multi-dimensional datasets.



Get ultimate image quality by combining **spinning disk with THUNDER**.





Rat brain slide provided by EnCor Biotechnology Inc. (RBC101223) stained with Hoechst, CPCA-GFAP, Fox/NeuN and RPCA-TH





**Intelligent automation:** Efficiently set up your experiments with the DMI8's intelligent automation.



**AFC:** Automatically maintains your focus, in real time.



**Sample finder:** Generate an in-focus overview of the entire sample at the click of a button.



**Synapse:** Integrated real-time controller directly controls all hardware components, with microsecond precision.



**Navigator:** See the full picture then set up and perform multi-position experiments on a wide range of sample formats.



**T-House:** Offers two Infinity Ports, allowing direct access to the infinity space for flexible upgrading of your DMI8.



**Adaptive Immersion:** Create smoother workflows and enjoy the freedom to use optimum water immersion objectives for live cell experiments.



**Multiple TL contrasting methods:** A wide range of contrasting techniques offers label-free insights into unstained samples.



**SmartCORR:** Automatically optimize your objective's correction collar settings, significantly improving image quality by reducing spherical aberration.



**TIRF:** Study biology at the surface of your cells down to the single molecule level.



**THUNDER:** Remove the haze to improve fluorescence image quality using Computational Clearing.



**Spinning Disk:** High-speed, versatile confocal imaging allows you to explore deeper into your samples.



**Advanced detectors:** Make the most of large-format, low-noise detectors to collect high-quality data from your samples.



**Upgradability:** Future-proof your experiments with this adaptable solution.





## GET THE MOST FROM YOUR DMI8

Maximize your investment through partnership with our Application Support Specialists throughout your system's lifetime. Whether you are trying to get started or need to further tweak your system to address new workflows, our expert team will ensure you get the best possible data out of your microscope.



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