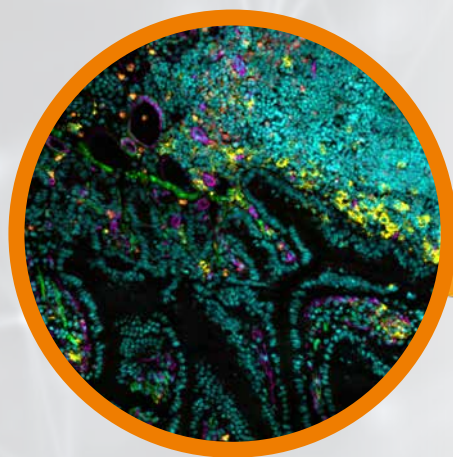




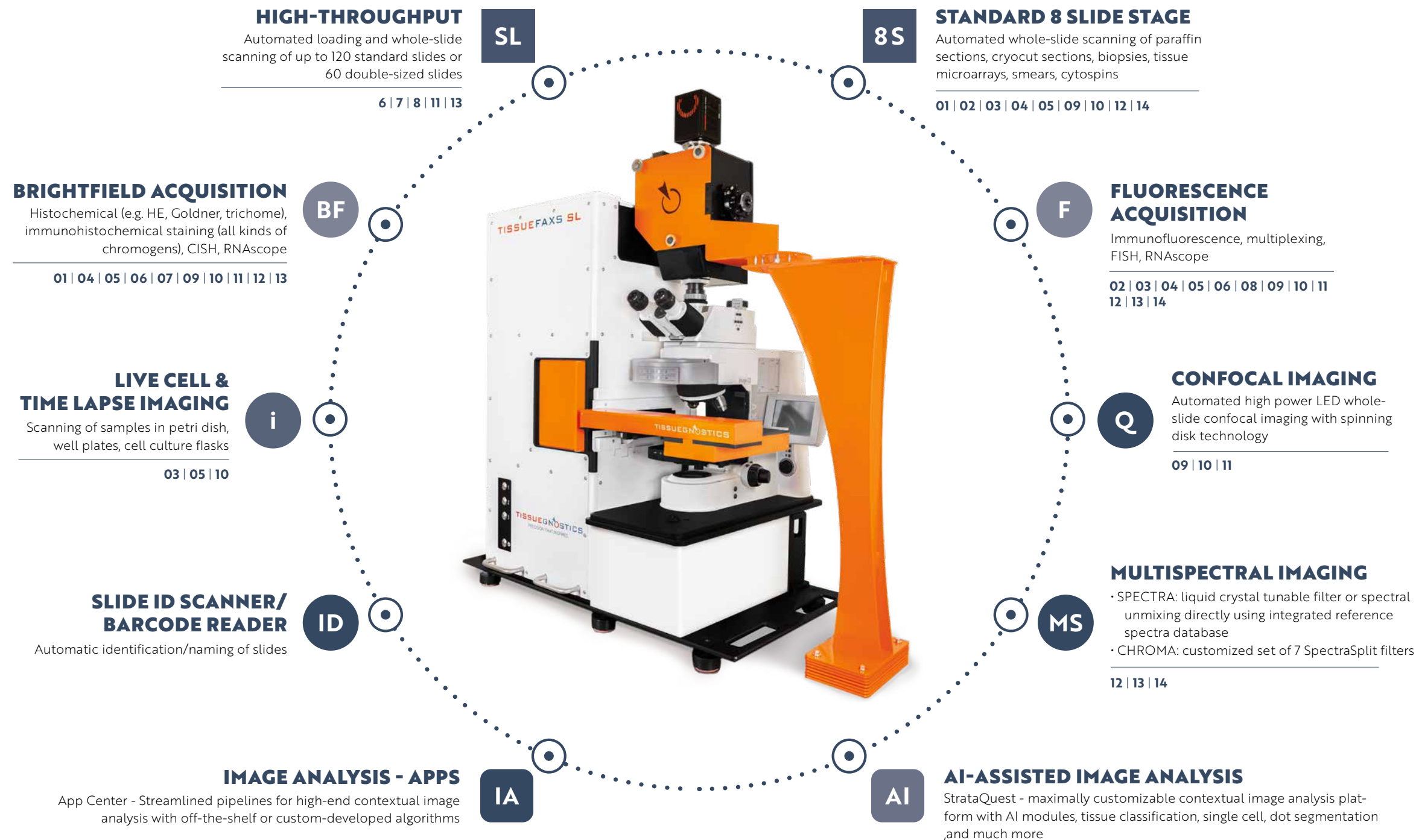
TISSUEGNOSTICS
PRECISION THAT INSPIRES

TISSUEFAXS

INTEGRATED BIOMEDICAL
IMAGING AND ANALYSIS
PLATFORM



www.tissuegnostics.com



Explore your sample with TissueFAXS

The TissueFAXS range offers unmatched modularity and upgradability, allowing you to build a system tailored to your specific research needs. Choose from a variety of cameras, objectives, and filter sets to optimize your imaging capabilities.

As your research evolves, the system can easily be upgraded to include advanced features like multispectral imaging, confocal microscopy, or even a slide loader for high-throughput workflows.

TissueFAXS configurations

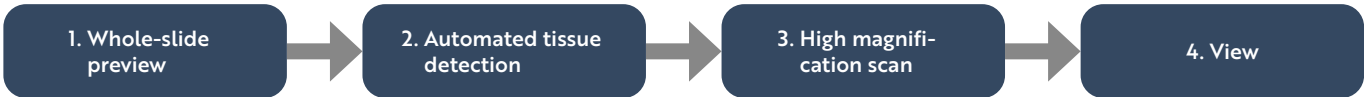
01	TissueFAXS HISTO	06	TissueFAXS SL	11	TissueFAXS SL Q
02	TissueFAXS FLUO	07	TissueFAXS SL HISTO	12	TissueFAXS SPECTRA
03	TissueFAXS i FLUO	08	TissueFAXS SL FLUO	13	TissueFAXS SL SPECTRA
04	TissueFAXS PLUS	09	TissueFAXS Q	14	TissueFAXS CHROMA
05	TissueFAXS i PLUS	10	TissueFAXS i Q		

All tissue cytometers are available in a ,scan only' configuration without image cytometry software.

TissueFAXS IMAGING SOFTWARE

TissueFAXS Scanning and Management software integrates all the hardware components into an easy to use workflow. It provides highly-customizable automated scanning capabilities, smooth zooming and sample navigation even during scans and management of scanned projects.

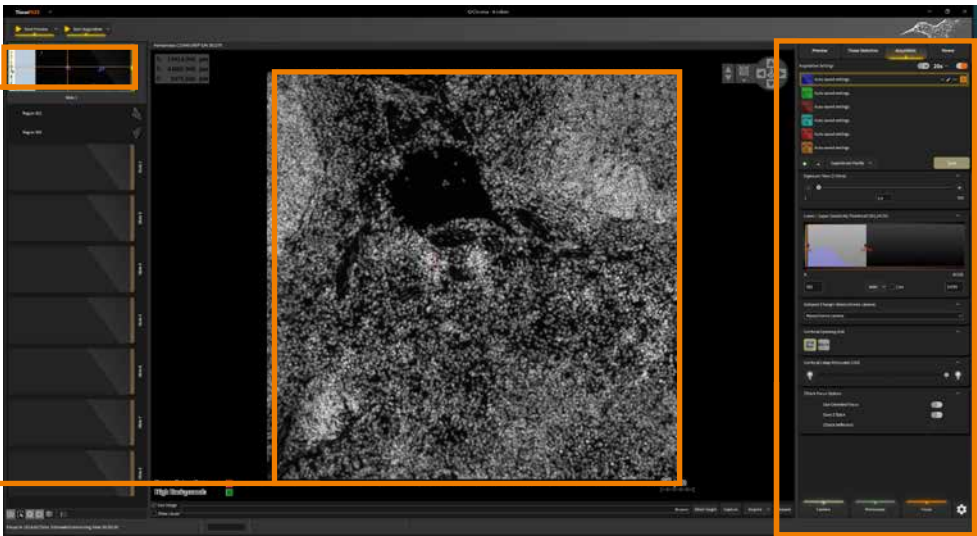
4 STEP WORKFLOW



- One-click automation workflow – reuse of established templates
- Special workflow for TMAs and well plates

Full slide preview

Live image



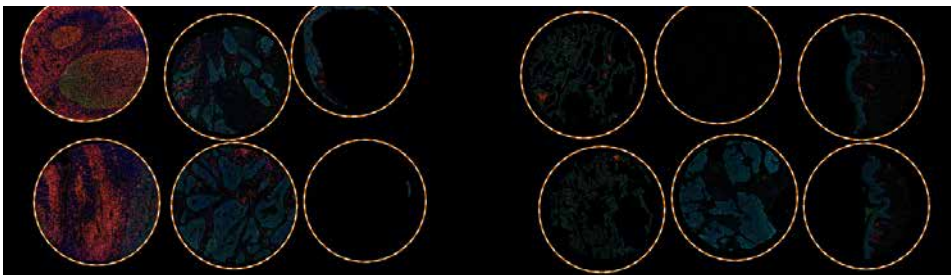
Microscope & camera control

ADAPT THE FOCUS TO YOUR NEEDS

- Choose between autofocus methods to accommodate challenging samples
- Use focus map mode or matrix focus mode
- Z-stacking / Z-projection algorithms
- Correction of individual FOV outliers

WORKFLOW FOR TMA SCANNING

Streamlined workflow to easily detect, name and acquire TMA spots.

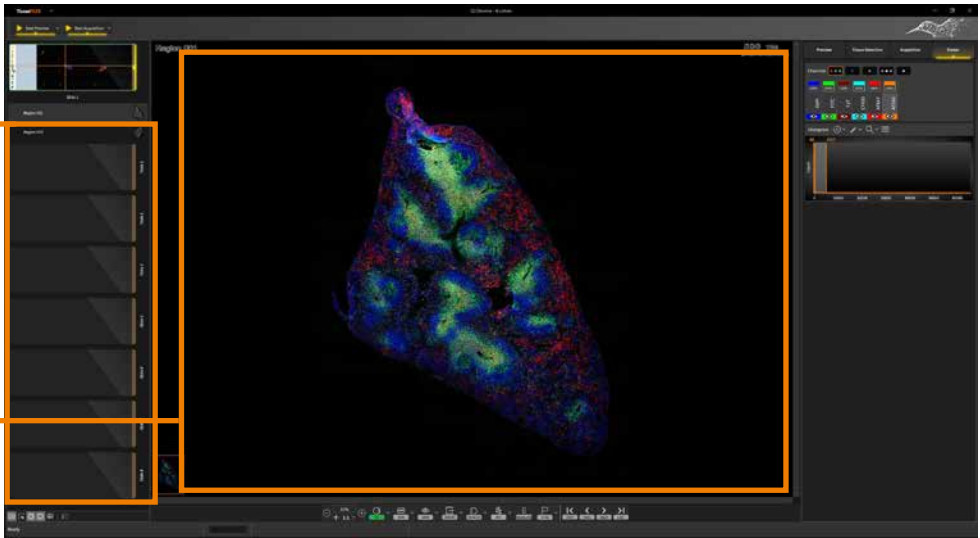


SAMPLE VIEWER

- Full access to stitching parameters
- Smart caching for easy navigation and smooth zooming
- Automated registration of consecutive samples
- Share and access your virtual slides with the Exposé™ Image Manager & WebViewer
- Compare multiple scans side-by-side
- Edit images for visualization
- Measure, draw, place size bar and annotate
- Post-processing to optimize image quality and/or visualization of specific structures

Sample browser

Image viewer



ADDITIONAL FEATURES AND OPTIONS

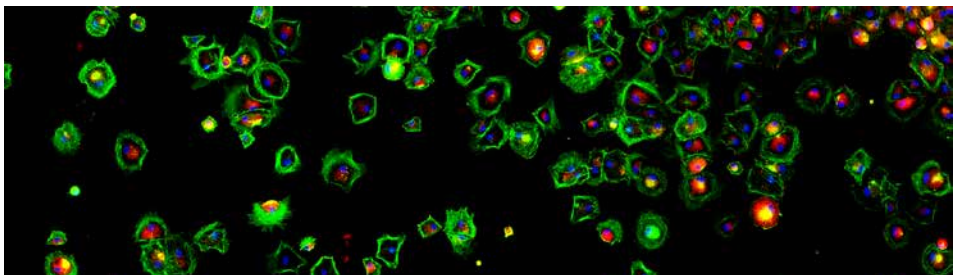
- Flexible hardware configurations
- Supports objective lenses with magnifications from 1-100x (incl. oil immersion)
- Standard, 2x, 4x, and 8x-sized slides
- Time lapse imaging, auto-oiling
- Illumination / shading correction
- High-dynamic range visualization (12 bit color, 16 bit monochrome)
- 3D image viewing

EXPORT

- Supports Open Microscopy Environment (OME)
- TissueFAXS virtual slides are fully compatible with Bio-Formats
- Export and conversion options include OME-TIFF, BigTIFF, TIFF, PNG, JPG, and BMP
- Custom LIS/HIS integration available (optional)

WORKFLOW FOR WELL PLATE IMAGING

Streamlined workflow designed specifically for well-plate imaging, applicable to most well plate formats.



TissueFAXS

BRIGHTFIELD AND FLUORESCENCE IMAGING



TissueFAXS automated slide scanning systems are available in upright and inverted configurations in fluorescence and/or brightfield modes for scanning and analysis, therefore providing unparalleled flexibility for researchers.

TissueFAXS DESIGN

All imaging systems are modular and upgradable. Modularity brings high versatility and flexibility.

- Upright/inverted microscope
- Powerful LED light source
- 4.2 Mp Color/Monochrome high-QE CMOS Cameras
- PC + 2 Monitors (4K)
- TissueFAXS imaging software
- StrataQuest analysis software

8-SLIDE STAGE

Motorized 8-slide stage controllable via TissueFAXS imaging software or joystick.



HIGH-SPEED CAMERAS

Ultra-sensitive, high quantum efficiency, high dynamic range 4.2 Mp sCMOS cameras for brightfield and fluorescence imaging.

UPRIGHT

- Slides
- Motorized turret for 7 objectives
- Motorized turret for 10 reflectors
- High-throughput scanning
- Support for oil immersion and auto-oiling
- Transmission & fluorescence overlay



TissueFAXS PLUS

WHOLE-SLIDE IMAGING

High-resolution panoramic imaging for scanning entire tissue sections in brightfield and/or fluorescence.



Mouse embryo - trichome staining

INVERTED

- Slides, petri dishes, well plates, flasks
- Motorized turret for 6 objectives
- Motorized turret for 6 reflectors
- Live cell imaging
- Time kinetic & end-point assays
- Transmission & fluorescence overlay
- Protection with handling liquids



TissueFAXS i PLUS

LIGHTPATH FOR

- Multi-color fluorescence
- Brightfield
- Phase contrast (optional)
- DIC (optional)
- Darkfield (optional)

HIGH PERFORMANCE LIGHT SOURCES

System software-controlled and maintenance free long lasting LEDs.

TissueFAXS CONFIGURATIONS



TissueFAXS PLUS



TissueFAXS HISTO



TissueFAXS FLUO

TissueFAXS i CONFIGURATIONS



TissueFAXS i PLUS



TissueFAXS i FLUO



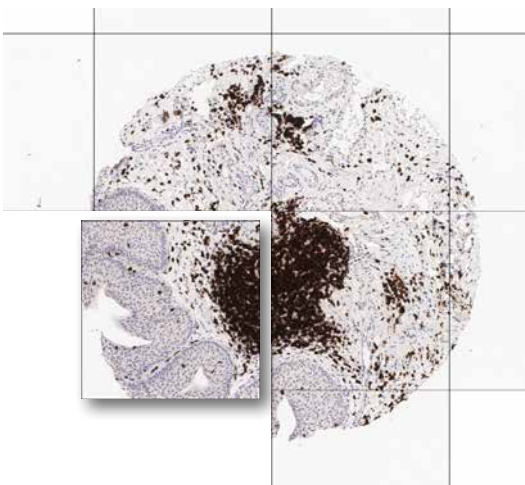
TissueFAXS i PLUS WITH ENVIRONMENT CONTROL

TissueFAXS SL

WHOLE-SLIDE HIGH-THROUGHPUT IMAGING

SL

The TissueFAXS SL platform automatically scans up to 120 slides in brightfield and/or fluorescence mode. It is upgradable for confocal and multispectral imaging. High-speed cameras as well as state-of-the-art slide loading robotics provide high-throughput imaging of slides at top speeds.



TissueFAXS SL PLUS

ADDITIONAL FEATURES

- TMA scanning is supported in all configurations
- TissueFAXS SL is capable of oil immersion scanning
- 1-click automation with various scanning templates
- Scanning of brightfield and fluorescence slides in mixed order
- Multiple validation workflows

TECHNOLOGY

- TissueFAXS SL systems are modular and consist of a microscope, automatic slide loader, cameras, light sources and a PC with two monitors
- The slide loader is equipped with three 40 slide magazines with each magazine containing 20 two-slide metal clips for a total of 120 standard slides
- Supports slides with rounded corners
- Upgradable with confocal or multispectral modules
- The clips are magnetically gripped and moved out to the stage for scanning. In this way, any contact of the slides with moving parts is prevented, safeguarding them against breakage
- Alternatively, 60 double-sized (76 × 52 × 1 mm) slides can be loaded and scanned
- Tolerates immersion oil
- Additional magazines available for rapid reloading
- Slide-drop protection when magazines are outside the loader
- Internal sensor for reliable slide detection



TissueFAXS: STANDARD CONFIGURATIONS

	TF PLUS	TF FLUO	TF HISTO	TF i PLUS	TF i FLUO	TF SL
Special feature	Brightfield and fluorescence imaging	Fluorescence imaging	Brightfield imaging	Brightfield and fluorescence imaging	Fluorescence imaging	High-throughput brightfield and fluorescence imaging
Microscope stand	Upright	Upright	Upright	Inverted	Inverted	Upright
Compatible slide formats	Standard/over-sized	Standard/over-sized	Standard/over-sized	Standard/over-sized	Standard/over-sized	Standard/double-sized
Slide capacity	8	8	8	8 slides, petri dish, well plates, cell culture flasks	8 slides, petri dish, well plates, cell culture flasks	120 slides
Objectives	Up to 7	Up to 7	Up to 7	Up to 6	Up to 6	Up to 7
Camera fluorescence	sCMOS (16-bit, 2048x2048, mono-chrome)	sCMOS (16-bit, 2048x2048, mono-chrome)	–	sCMOS (16-bit, 2048x2048, mono-chrome)	sCMOS (16-bit, 2048x2048, mono-chrome)	sCMOS (16-bit, 2048x2048, mono-chrome)
Camera brightfield	CMOS camera (color)	–	CMOS camera (color)	CMOS camera (color)	–	CMOS camera (color)
Light sources	Solid-state multicolor LED VIS-LED	Solid-state multicolor LED	VIS-LED	Solid-state multicolor LED VIS-LED	Solid-state multicolor LED	Solid-state multicolor LED VIS-LED

TissueFAXS Q PLATFORM

EXPLORE HIGH-RESOLUTION IMAGING



The TissueFAXS Q series delivers automated whole-slide confocal imaging using a confocal spinning disk, paired with a high-power multi-channel LED light engine, a high-end sCMOS camera and the TissueFAXS automated scanning workflow. Take advantage of the automated confocal mode to increase resolution and overall image quality in thick tissue sections and/or explore your tissue sample through a 3D reconstruction of entire virtual slides.

- Mouse brain
- Size of 73.3 mm²
 - Four channels
 - Confocal Z-stack in 21 layers, 29400 individual images scanned with Plan-Apo 20x/0.8 Air in 1.5 hours

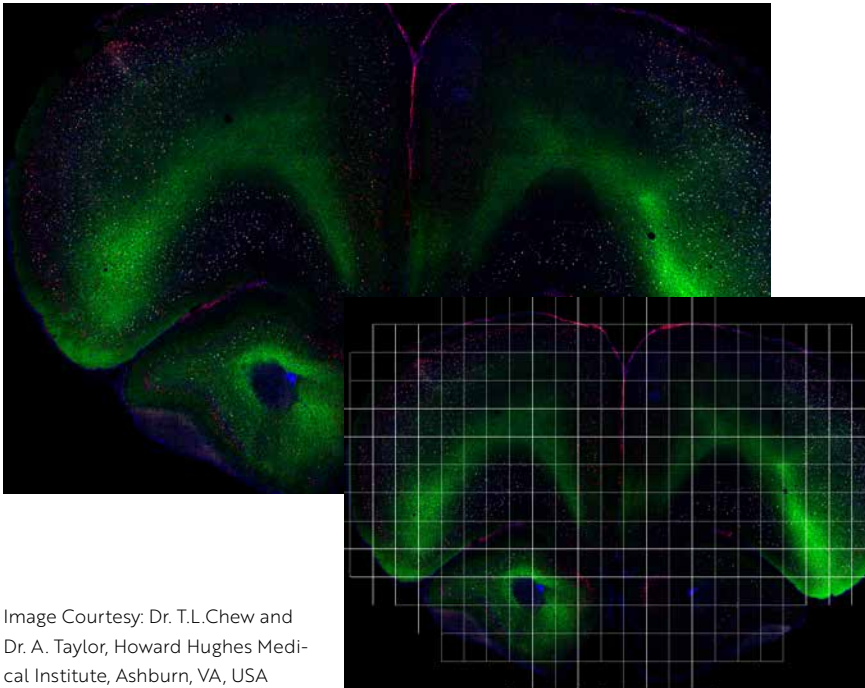
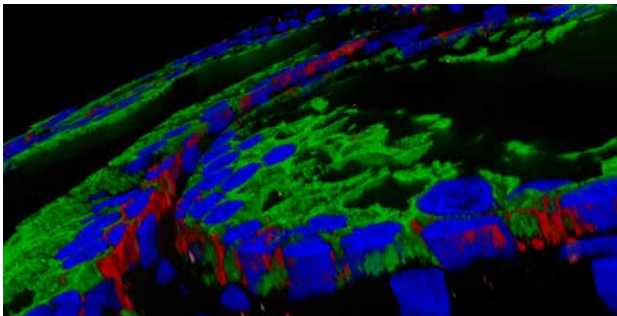


Image Courtesy: Dr. T.L.Chew and Dr. A. Taylor, Howard Hughes Medical Institute, Ashburn, VA, USA

TECHNOLOGY

Ultra-high spinning disk rotation rate ensures homogenous wide-field illumination while keeping ideal optical sectioning.



WORK WITH CONFOCAL VIRTUAL SLIDES

Thousands of fields of view seamlessly stitched together.

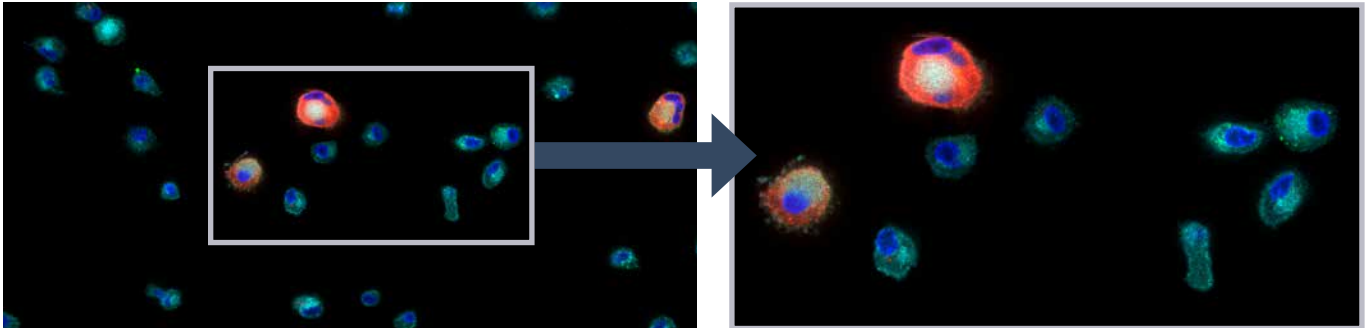
3D VISUALIZATION

Use the TissueFAXS 3D Viewer to explore spatial context.

FEATURES

- Supports live cell imaging in glass-bottom plates (TF i Q+)
- Acquisition of up to 200µm sample thickness, or much more with tissue clearing
- Contrast enhancement by smart projection
- Supports expansion-based super resolution

CONFOCAL IMAGING OF CULTURED CELLS



Cultured macrophages courtesy of Ragon Institute of MIT, MGH and Harvard

PROPERTIES OF TF CONFOCAL CONFIGURATIONS

	TF Q+	TF SL Q+	TF iQ+
Special feature	Confocal imaging	High-throughput confocal imaging	Confocal imaging of cultured cells as well as slides
Microscope stand	Upright	Upright	Inverted
Microscopy mode	Confocal imaging, wide-field fluorescence, bright-field	Confocal imaging, wide-field fluorescence, bright-field	Confocal imaging, wide-field fluorescence, bright-field
Compatible slide formats	All standard and over-sized slides	All standard and double-sized slides	All standard and over-sized slides, cell culture plates/flasks, petri dish
Slide capacity	8	120	8
Objectives	Up to 7	Up to 7	Up to 6
Camera fluorescence	sCMOS (16-bit, 2048x2048, monochrome)	sCMOS (16-bit, 2048x2048, monochrome)	sCMOS (16-bit, 2048x2048, monochrome)
Camera brightfield	CMOS camera (color camera)	CMOS camera (color camera)	CMOS camera (color camera)
Light sources	Solid-state multicolor LED VIS-LED	Solid-state multicolor LED VIS-LED	Solid-state multicolor LED VIS-LED



TF Q+
8 slide automated confocal scanning



TF SL Q+
high-throughput confocal tissue cytometry



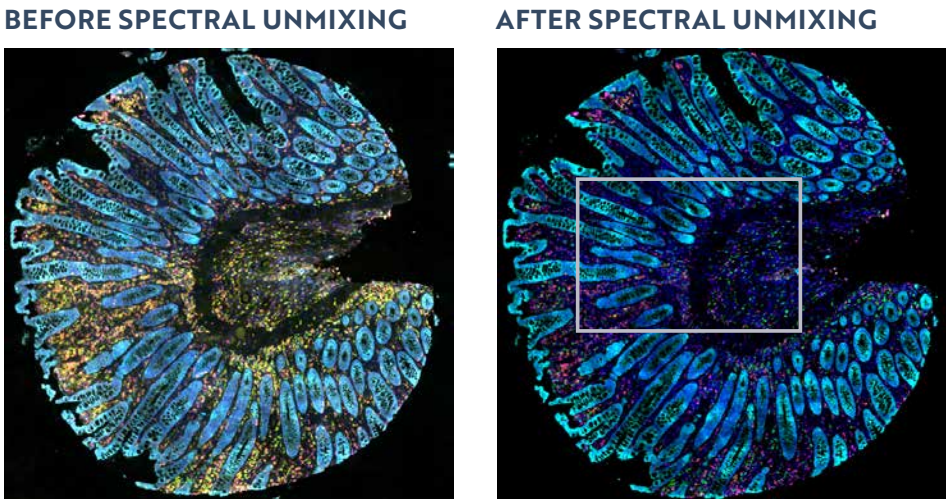
TF iQ+
live cell confocal imaging of cultured cells and tissue slides

TissueFAXS SPECTRA

MULTISPECTRAL IMAGING USING LCTF TECHNOLOGY

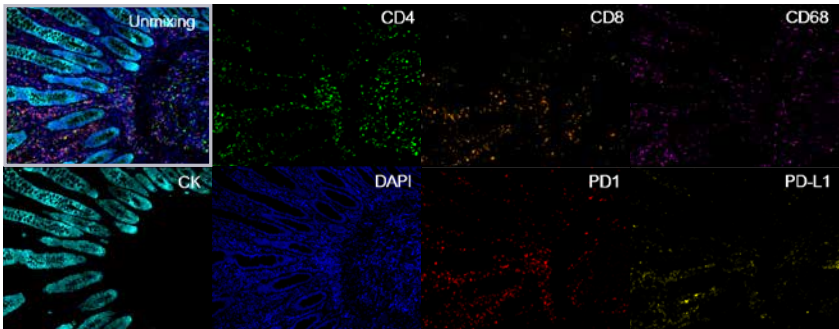
MS

Liquid crystal tunable filters (LCTF) are optical filters that can be tuned at high speed to transmit only a narrow and specific wavelength range of light within the visible spectrum. This makes them ideal for a quick building of lambda stacks (spectral cubes), which can further be separated by TissueGnostics’ powerful spectral unmixing algorithms – leading to elimination of bleed through and autofluorescence.



Colon cancer tissue microarray stained for seven markers

DRASTICALLY INCREASE THE NUMBER OF MARKERS
Stain up to 8 markers within one experiment



TissueFAXS MULTISPECTRAL CONFIGURATIONS



TissueFAXS SPECTRA



TissueFAXS SL SPECTRA



TissueFAXS CHROMA

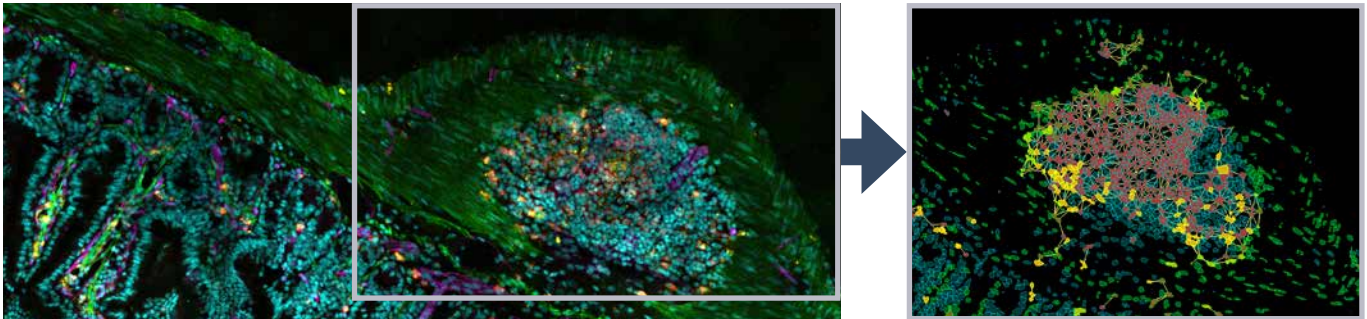
TissueFAXS CHROMA

HIGH-SPEED MULTISPECTRAL TISSUE CYTOMETER

MS

TissueFAXS CHROMA was designed to strike the balance between speed and spectral information performance. This is achieved by an optimized set of narrow band pass filters that match perfectly with a 7-line LED to eliminate channel bleed-through. This cost-effective high-speed whole-slide scanner reaches its full potential when supplemented with single cell and contextual image analysis. TissueFAXS CHROMA enables the automated scanning for up to 7 markers at a time without the necessity of building lambda stacks or spectral unmixing.

HIGH-CONTENT CELLULAR PHENOTYPING AND SPATIAL ANALYSIS



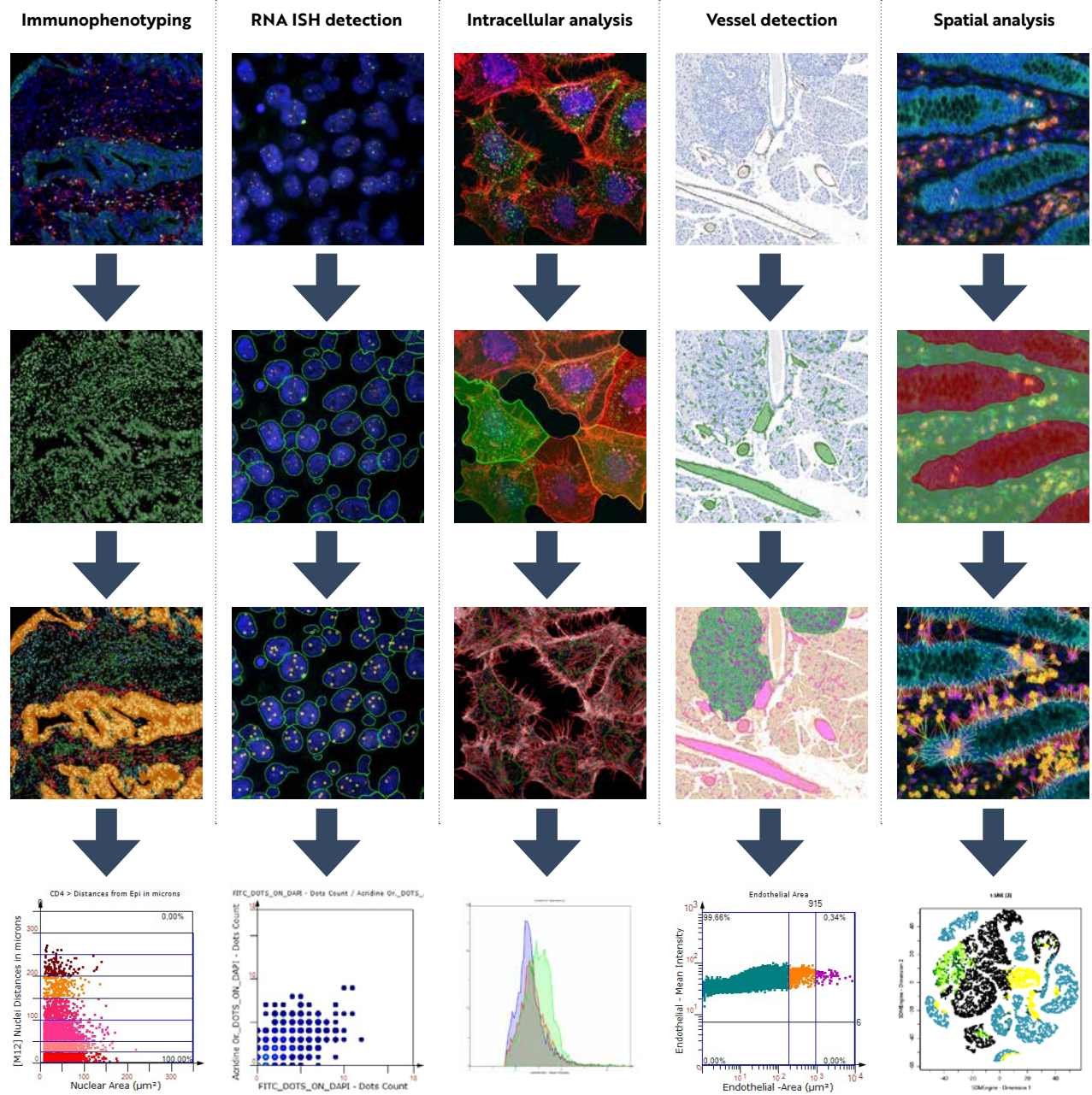
Mouse colon section stained with 7 markers

TissueFAXS MULTISPECTRAL CONFIGURATIONS

	TF SPECTRA	TF SL SPECTRA	TF CHROMA
Technology	Liquid crystal tunable filter, spectral unmixing engine	Liquid crystal tunable filter, spectral unmixing engine	Special SpectraSplit filters
Special feature	Multispectral imaging	Bulk scanning in multispectral mode	Multispectral widefield imaging
Microscope stand	Upright	Upright	Upright
Microscopy mode	Multispectral imaging, wide field fluorescence, brightfield	Multispectral imaging, wide field fluorescence, brightfield	Multispectral widefield fluorescence imaging
Compatible slide formats	All standard and over-sized slides	All standard and double-sized slides	All standard and over-sized slides
Slide capacity	8	120	8
Objectives	Up to 7	Up to 7	Up to 7
Camera fluorescence	sCMOS (16-bit, 2304x2304, QE 95%)	sCMOS (16-bit, 2304x2304, QE 95%)	sCMOS (16-bit, 2304x2304, QE 95%)
Camera brightfield	CMOS camera (color camera)	CMOS camera (color camera)	CMOS camera (color camera)
Light sources	Solid-state multicolor LED VIS-LED	Solid-state multicolor LED VIS-LED	Solid-state multicolor LED VIS-LED

BIOMEDICAL IMAGE ANALYSIS

TissueGnostics offers powerful integrated image analysis software for single cell quantification (HistoQuest and TissueQuest) and/or contextual image analysis with integrated AI modules (StrataQuest). Perform high-dimensional analyses of your multispectral samples with TissueFAXS SPECTRA in combination with TissueGnostics' image cytometry tools.

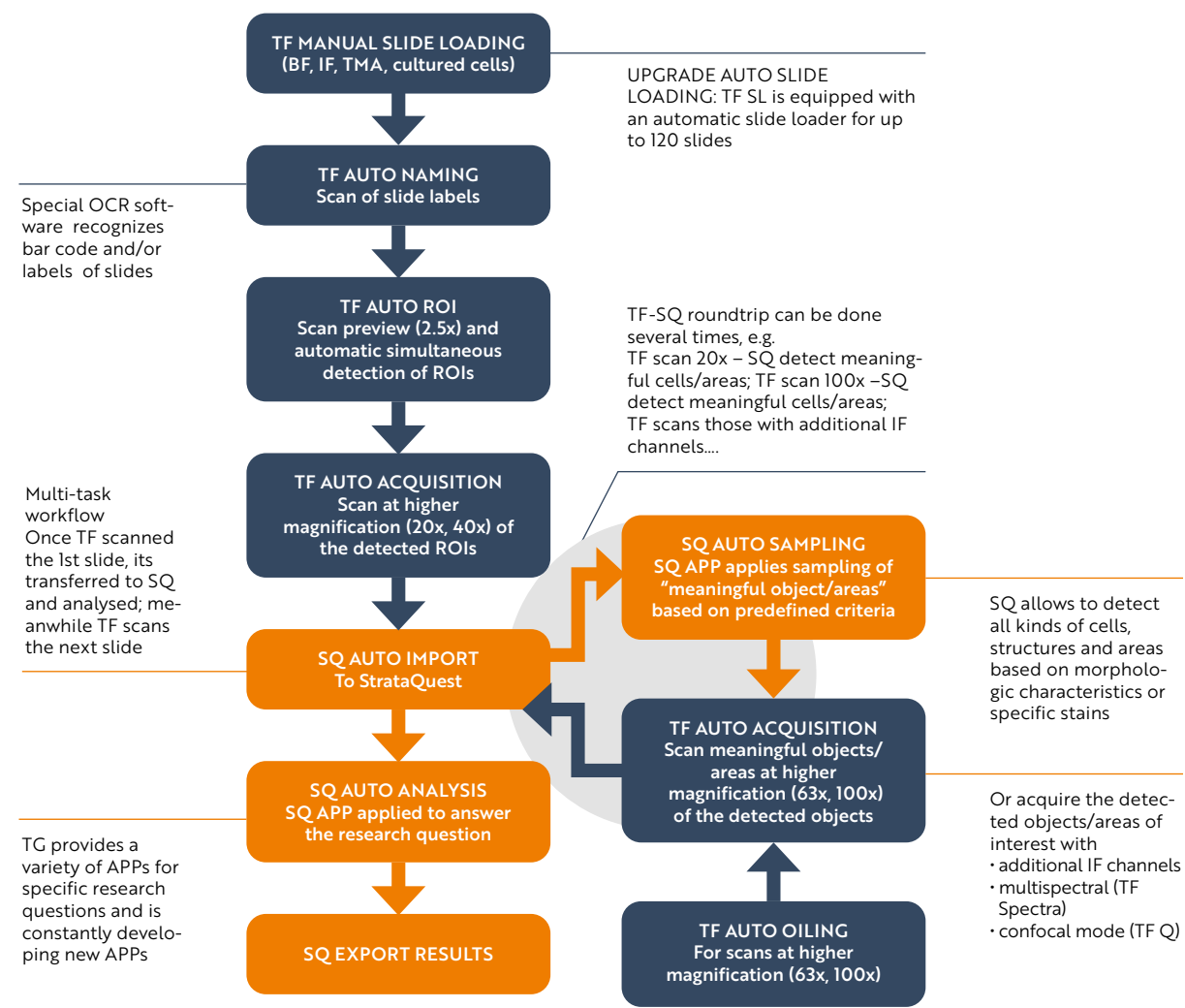


STREAMLINED ANALYSIS SOLUTIONS - APPS

TissueGnostics offers StrataQuest Apps for a variety of biomedical image analysis applications. If you cannot find the perfect solution for your research question, please contact us. TissueGnostics offers the development of customized Apps for your specific analysis needs.

INTELLIGENT SCANNING

This workflow displays the power of TissueFAXS (TF) and StrataQuest (SQ) operated in tandem as one fully automated system. This highly versatile workflow is based on the modular TissueFAXS systems and the advanced image processing capabilities of StrataQuest and permits iterative scanning, analysis and rescanning under different and/or refined conditions (e.g. higher magnification).



TG USER EXPERIENCES

»The addition of the TissueFAXS INVERTED PLUS to our core facilities' repertoire has made a world of difference to the ease of data collection and processing. The acquisition software is remarkably well-designed, offering extreme flexibility without compromising on the robustness and ease of use for the whole system.«

(Dr. Jan Soetaert, Queen Mary University of London)

MEET US GLOBALLY



REFERENCE PUBLICATIONS

TissueGnostics systems produce valuable research on six continents around the world and the list of publications grows daily. Check TG's searchable online database of publications to see how TissueGnostics can support you!

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