

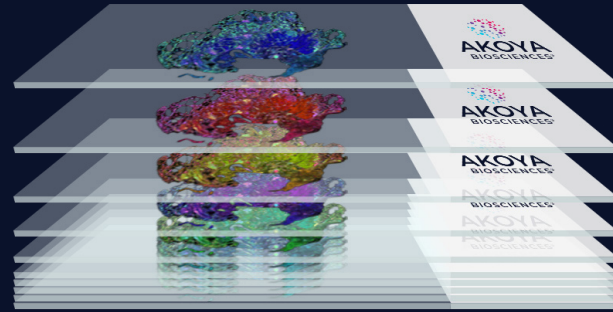


PHENOCYCLER-FUSION 2.0

The Fastest Spatial Biology Solution

Spatial Discoveries at **YOUR** Scale

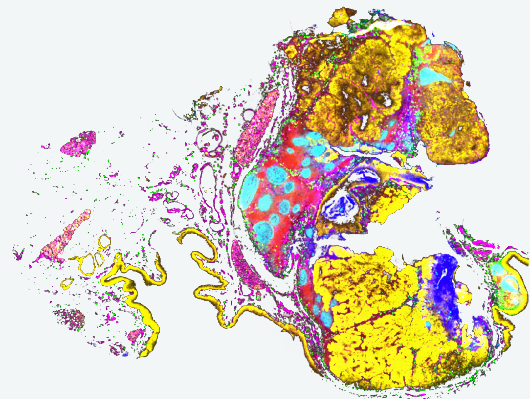
Whether you're unlocking insights from a single sample, conducting spatial studies on dozens of samples, or exploring population-level analyses on hundreds of samples, PhenoCycler®-Fusion 2.0 will match the scale of your spatial studies.



100s OF BIOMARKERS, 1 PATIENT SAMPLE

Deep Spatial Phenotyping Could Explain Partial Immunotherapy Response

Whole-slide spatial phenotyping of a head and neck cancer sample with a 103-plex panel revealed differences in immune cell infiltration between the four tumor regions (e.g., Tumor region 4 is hot, Tumor region 3 is cold). This heterogeneity may have contributed to the partial immunotherapy response seen in this patient.



READ PUBLICATION AT
akoyabio.com/100-plex



“Akoya’s technology has provided us with a new level of understanding, opening up exciting possibilities for advancing drug discovery and precision medicine.”

– **Arutha Kulasinghe, PhD**

Head of the Clinical-oMx Lab
University of Queensland

EXPERIENCE THE FASTEST SPATIAL BIOLOGY SOLUTION

Why choose PhenoCycler-Fusion 2.0?

Why choose PhenoCycler-Fusion 2.0? Powered by high-speed imaging and proprietary barcoding technology, PhenoCycler-Fusion 2.0 introduces multi-slide automation with rapid fluidics establishing itself as the fastest spatial biology solution. These advanced capabilities amplify your ability to uncover more discoveries, faster.



THE FASTEST

The fastest spatial biology solution capable of imaging 1 million cells in 10 minutes with faster than ever cycling



SCALABLE PLEXING

Detect 100+ biomarkers while preserving tissue integrity using barcoding technology



HIGH THROUGHPUT

Maximize throughput without imaging area or plex constraints; effortlessly phenotype 40 samples at 20 plex in just one week



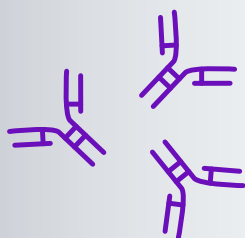
UNMATCHED CONTENT

Design your desired panels from an extensive database or get started with ready-to-use PhenoCode™ Discovery Panels

A SIMPLE END-TO-END WORKFLOW

The PhenoCycler-Fusion 2.0 solution is part of an integrated end-to-end workflow containing pre-optimized antibodies and reagents, fast fluidics and imaging, on-board data processing generating high-resolution QTIFF files. Now featuring multi-slide automation, PhenoCycler-Fusion 2.0 enables researchers to generate high-resolution images of multiple samples and panels simultaneously.

STAIN



COMPLETE SUITE OF ANTIBODIES & REAGENTS

- Single-step staining
- Ready-to-use PhenoCode™ Discovery Panels
- An extensive database with 350+ antibodies for customization

IMAGE



AUTOMATED CYCLING AND IMAGING

- Iterative cycling and whole-slide imaging
 - Rapid fluidics
 - Isothermal cycling preserving tissue integrity
- Multi-slide automation with dual panel analysis

FOR DEEP SPATIAL DISCOVERY

Akoya's proprietary QTIFF format serves as the cornerstone for spatial imaging, leveraging a unique image processing algorithm to maintain quality while generating manageable gigabyte-sized files. These analysis-ready QTIFF files streamline data analysis through seamless integration with software solutions and allow for easy integration with other modalities.

ANALYZE

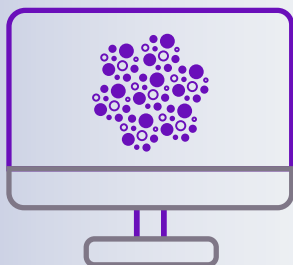


IMAGE ANALYSIS

- Image processing algorithms generating high-res QTIFF
- Manageable GB-sized QTIFF
- Compatible with all major analysis solutions

INTEGRATE

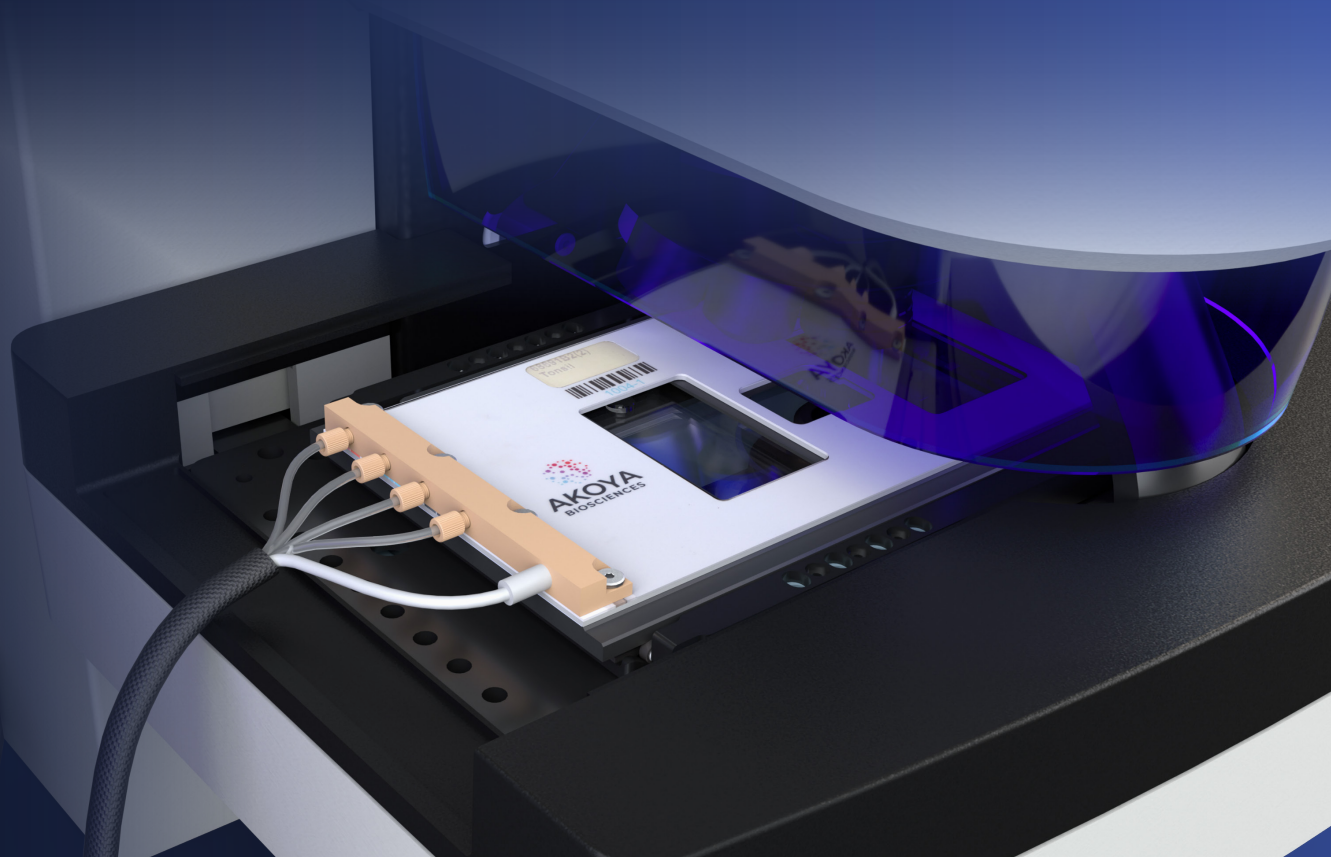
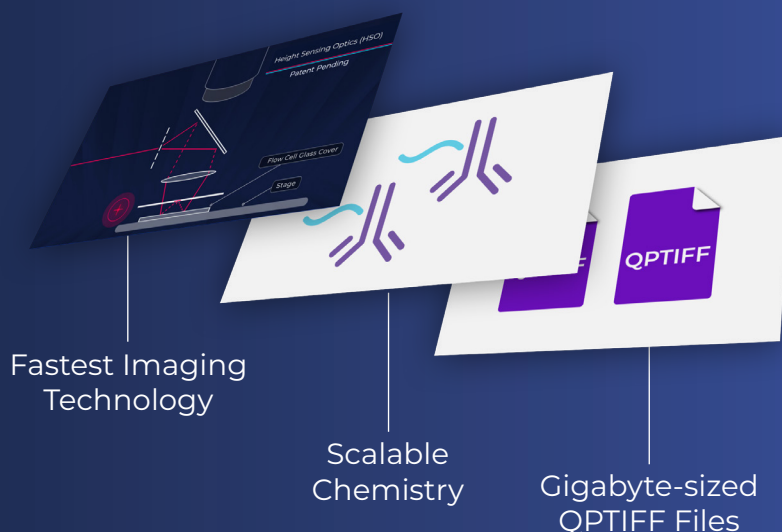


MULTIMODAL PHENOTYPING

- Perform downstream analysis such as
 - H&E staining
 - IHC
 - In situ RNA experiments
- Data integration with hyper-plex genomic assays

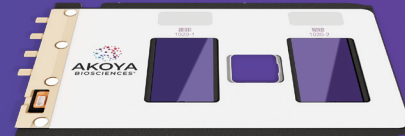
A UNIQUE TECHNOLOGY STACK DESIGNED TO SCALE WITH YOUR RESEARCH

Spatial Biology 2.0 is about developing spatial discoveries at scale. To accomplish this PhenoCycler-Fusion 2.0 equips researchers with a unique technology stack combining the fastest imaging technology powered by patented height sensing optics, scalable plexing enabled by proprietary barcoding technology, rapid cycling and multi-slide automation with GB-sized data outputs resulting in more discoveries faster than ever!

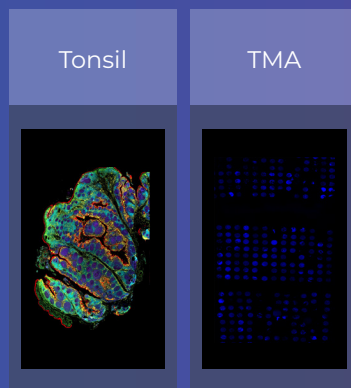


MORE DISCOVERIES, FASTER THAN EVER!

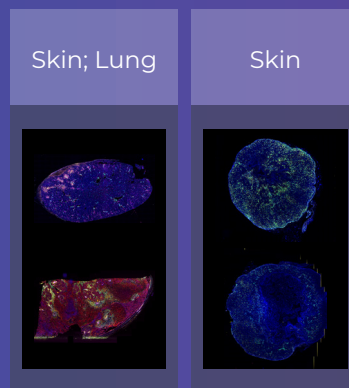
Discover a new frontier in spatial phenotyping using the powerful combination of multi-slide automation and an expansive imageable area.



1 Large Sample 300 TMA Cores Single Run



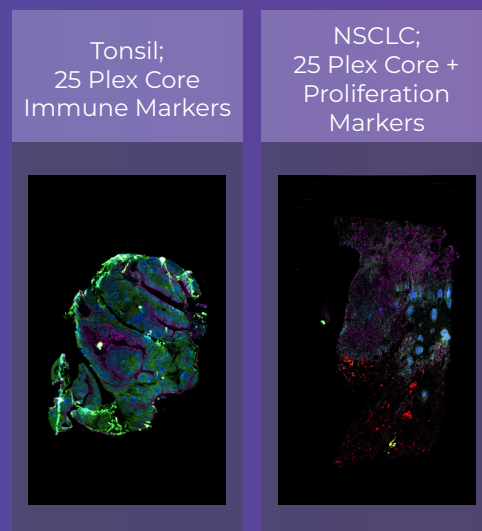
2 Samples Per Slide Single Run



1 Large Sample Per Slide Single Run



2 Panels Single Run



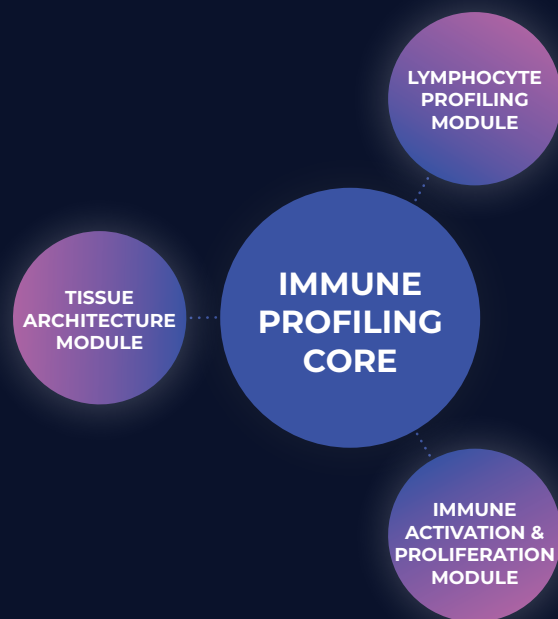
Harness the power of multi-slide automation and dual-panel analysis.

- Accelerate your research progress by addressing multiple biological questions simultaneously.
- Enhance the efficiency of your workflow by reducing the number of required runs.
- Strengthen the reliability of your results by ensuring consistency across samples.

SCALE MEETS FLEXIBILITY

Choose From Phenocode Discovery Panels or Design Your Own

Our barcoded antibody technology enables scalable plexing without compromising tissue integrity. Choose from ready-to-use PhenoCode Discovery Panels for time-efficient studies or design your own panels to suit your specific research needs. With the PhenoCycler-Fusion 2.0 system and PhenoCycler assays, you can embark on a spatial journey where scalability meets unparalleled flexibility.



SIMPLIFY YOUR RESEARCH WITH READY-TO-USE PHENOCODE DISCOVERY PANELS

- Ultrahigh-plex protein panels
- Curated panel design based on cancer hallmarks
- Modular Design for Scalability
- 3X faster assay development and optimization

EXPLORE AT akoyabio.com/phenocode-discovery

WANT TO DESIGN YOUR OWN PANELS?

Explore Akoya's extensive antibody database, a dynamic and ever-growing resource designed to build your own panels.



350+ Antibodies



100+ Phenotypes



30+ Tissue Types



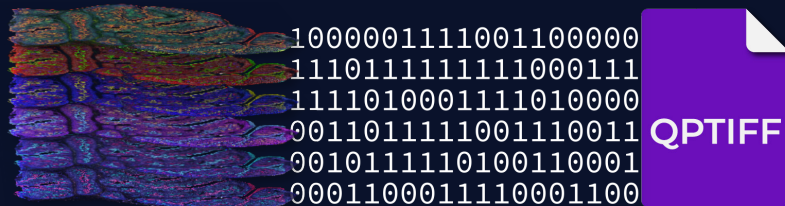
Multiple Species

EXPLORE AT akoyabio.com/PCF-antibodies

QPTIFF: POWERING SPATIAL DATA ANALYSIS

QPTIFF BREAKTHROUGH

Akoya's QPTIFF file format transforms spatial imaging, making it manageable and efficient.



OPTIMIZED FILE SIZES

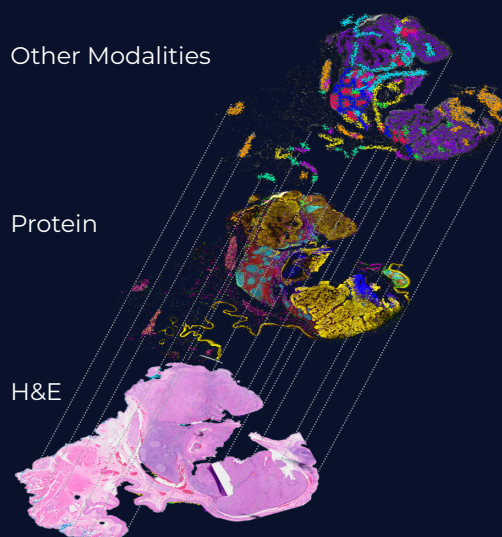
Our algorithm ensures high-quality spatial images in gigabyte-sized files, streamlining research processes.

UNIFIED SPATIAL ANALYSIS

QPTIFF seamlessly integrates into Akoya and partner platforms, harmonizing data across modalities for comprehensive research depth.

EXPLORE AT akoyabio.com/software

UNLOCK A SYSTEMS BIOLOGY VIEW WITH PHENOCYCLER-FUSION 2.0



CATALYZING MULTIMODAL TISSUE PHENOTYPING

Holistic Insight

Gain a systems biology perspective by examining tissue samples through various modalities, including H&E, RNA, DNA, protein, and beyond

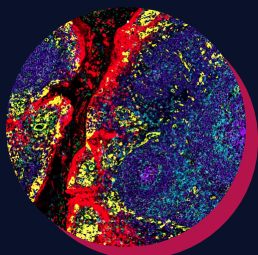
Integrated Data

Seamlessly integrate your protein data with hyper-plex genomics assays

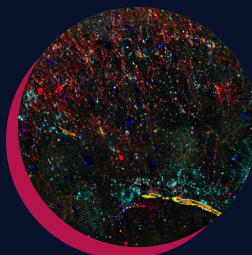
Streamlined Experiments

Conduct downstream H&E experiments and low-plex in situ RNA assays

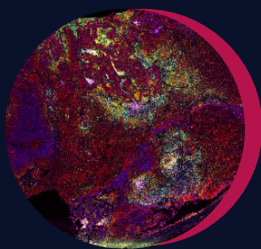
DISCOVERIES FUELED BY PHENOCYCLER-FUSION TECHNOLOGY



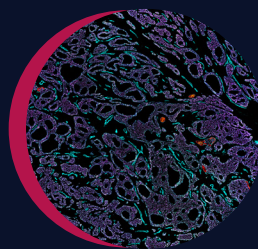
Tonsil



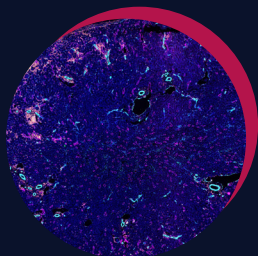
Brain



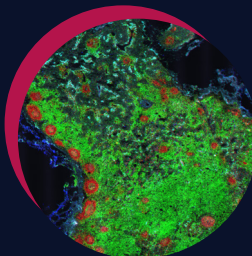
Lung



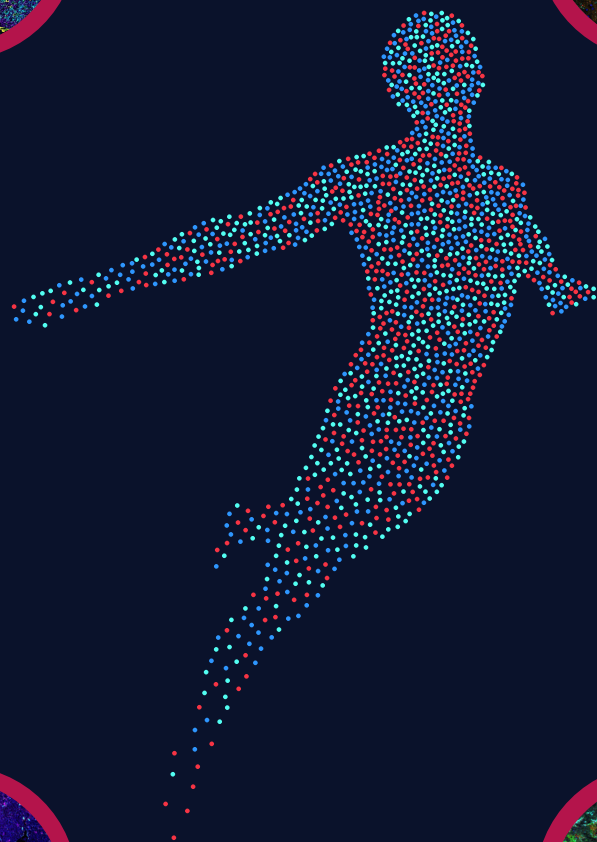
Breast



Skin





Lymph Node

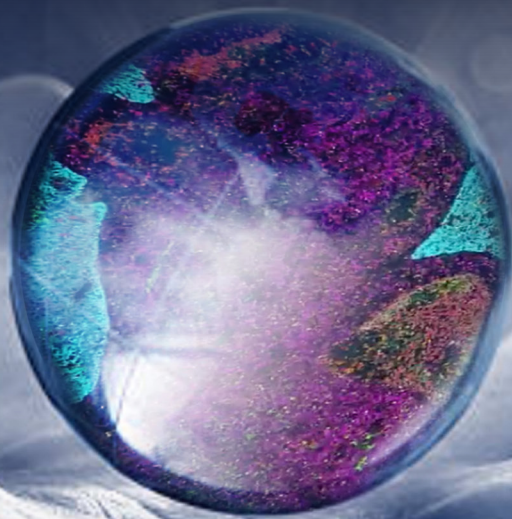


EXPLORE AT akoyabio.com/fusion/data-gallery

From Spatial Discoveries to Spatial Signatures At YOUR Scale

DISCOVERY		TRANSLATIONAL
		
PhenoCycler®-Fusion 2.0		Phenolmager® HT 2.0
Supports 100+ biomarkers depending on barcode compatibility	MULTIPLEXING CAPABILITIES	Separates up to 9 colors, even if overlapping
2 slides	SLIDE AUTOMATION	80 slide (with continuous loading technology)
25 minutes per cycle	SPEED (1.5 CM X 1.5 CM)	Fluorescence: 12 min (7 colors); Brightfield: 6 min
Whole-slides FFPE and Fresh Frozen; Tissue sections and microarrays	TISSUE FORMAT	Whole-slides FFPE and Fresh Frozen; Tissue sections and microarrays
Fluorescence, Brightfield	DETECTION METHOD	Fluorescence, Brightfield
10X (1.0 µm/pixel), 20X (0.5 µm/pixel) or 40X (0.25 µm/pixel)	RESOLUTION	10X (1.0 µm/pixel), 20X (0.5 µm/pixel) or 40X (0.25 µm/pixel)
Akoya & third-party solutions	IMAGE ANALYSIS SOFTWARE	inForm®, phenoptrReports & third-party solutions
Akoya Biosciences' whole-slide scan image (QPTIFF)	FILE FORMATS	Akoya Biosciences' whole-slide scan image (.QPTIFF), Multispectral images (.im3), color images (.JPEG, .BMP, .PNG)

Spatial Biology at YOUR Scale



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