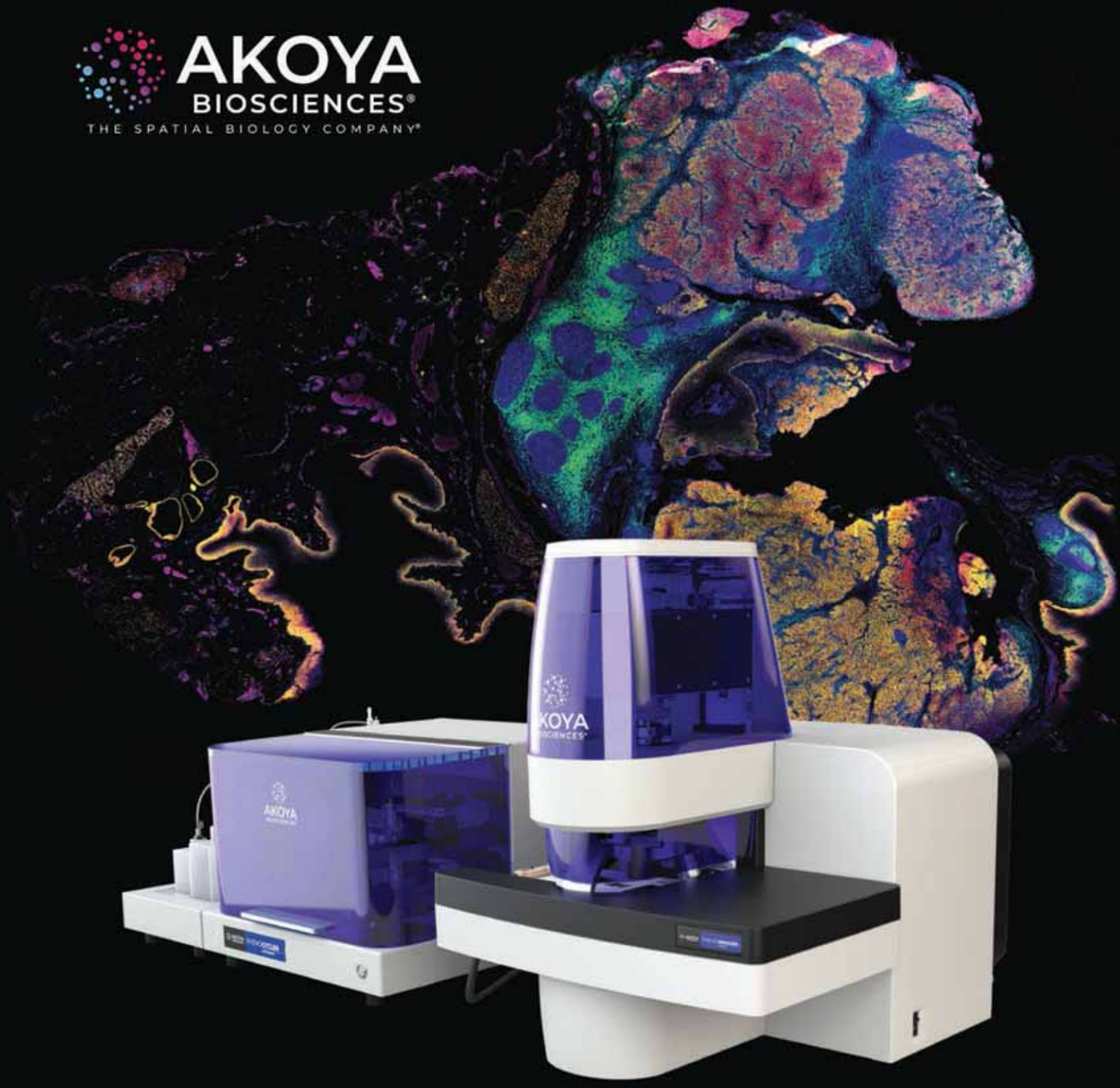
AKOYA BIOSCIENCES®
THE SPATIAL BIOLOGY COMPANY®

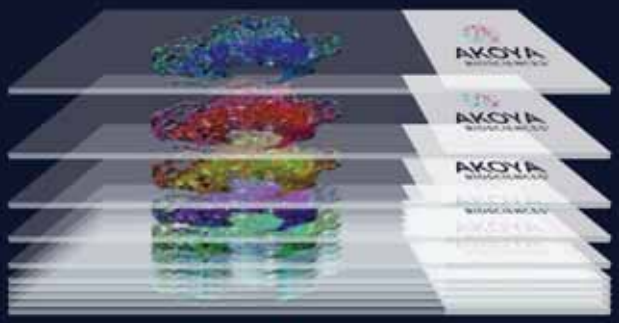


PHENOCYCLER-FUSION 2.0

The Fastest Spatial Biology Solution

Spatial Discoveries at YOUR Scale

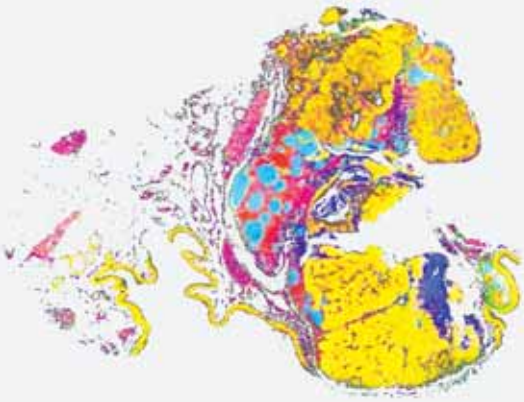
Whether you're unlocking insights from a single sample, conducting spatial studies on dozens of samples, or exploring population-level analyses on hundreds of samples, PhenoCycler®-Fusion 2.0 will match the scale of your spatial studies.



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

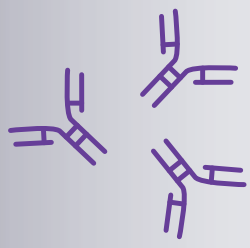
UNMATCHED CONTENT

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 QPTIFF 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

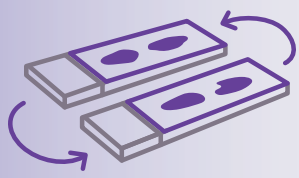
Akoya's proprietary QPTIFF format serves as the cornerstone for spatial imaging, leveraging a unique image processing algorithm to maintain quality while generating manageable gigabyte-sized files. These analysis-ready QPTIFF files streamline data analysis through seamless integration with software solutions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

ANALYZE

IMAGE ANALYSIS

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

INTEGRATE

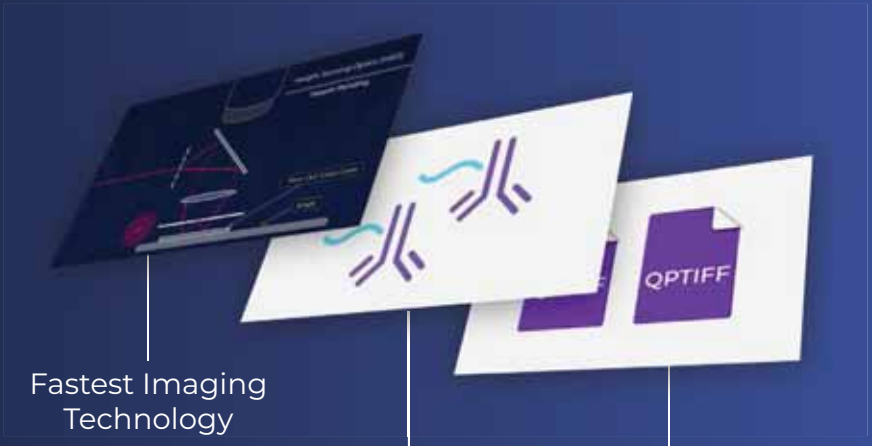


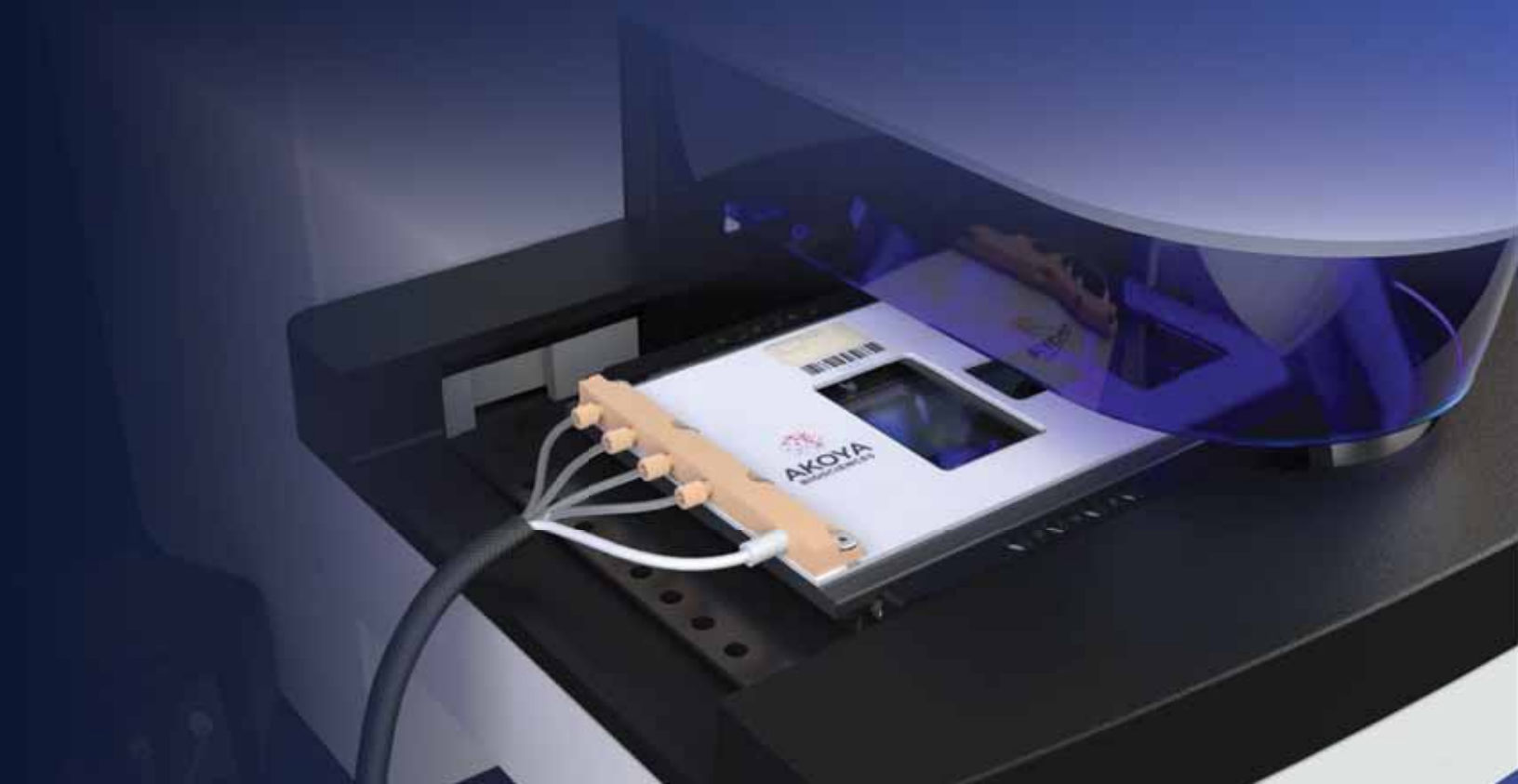
MULTIMODAL PHENOTYPING

- 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!

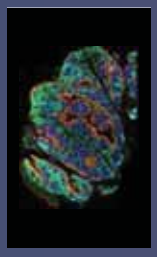




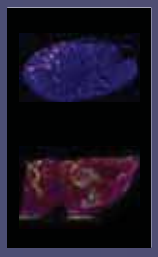
MORE DISCOVERIES, FASTER THAN EVER!

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

Tonsil	TMA
	

2 Samples Per Slide
Single Run

Skin; Lung	Skin
	

1 Large Sample Per Slide
Single Run

Head & Neck	Cerebellum
	

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.

2 Panels
Single Run

Tonsil; 25 Plex Core Immune Markers	NSCLC; 25 Plex Core + Proliferation Markers
	

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 PhenoCyler-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

Immuno-Oncology

Human IO60

Mouse IO

Neurobiology

Human FFPE

Mouse FFPE

Fast
Designed for the fastest spatial biology solution

Fully-optimized
Ready-to-use panels for easy implementation

Scalable
Add additional markers of your choice using custom barcodes

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

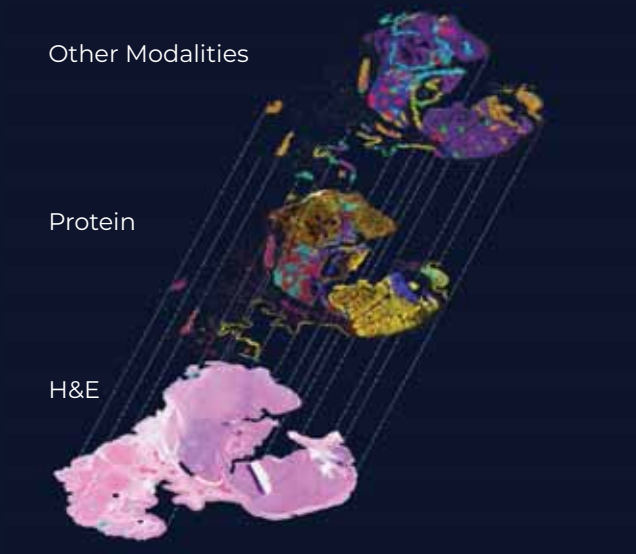
Our algorithm ensures high-quality spatial images in gigabyte-sized files, streamlining research processes.

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



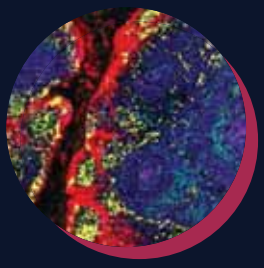
CATALYZING MULTIMODAL TISSUE PHENOTYPING

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

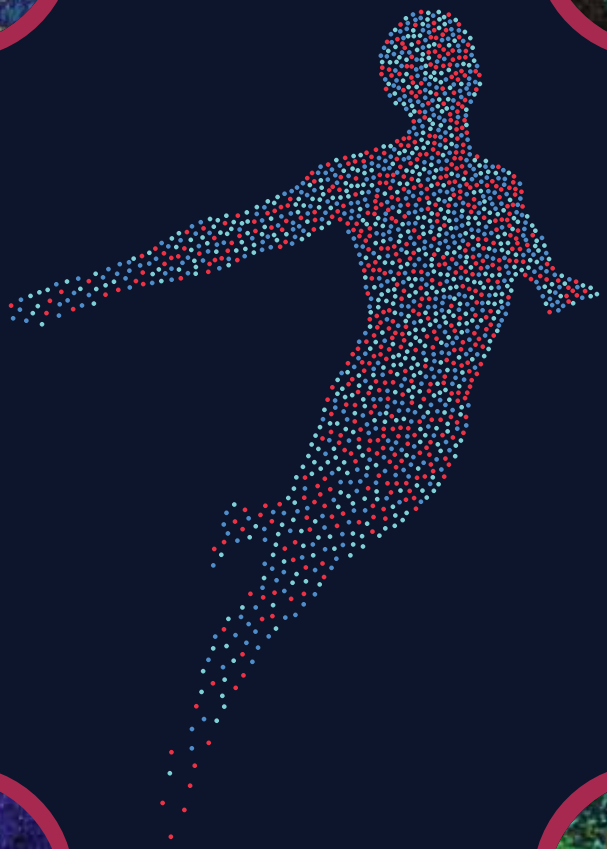
Streamlined Experiments
Conduct downstream H&E experiments and low-plex in situ RNA assays

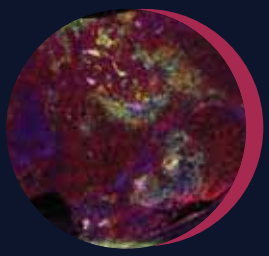
DISCOVERIES FUELED BY PHENOCYCLER-FUSION TECHNOLOGY



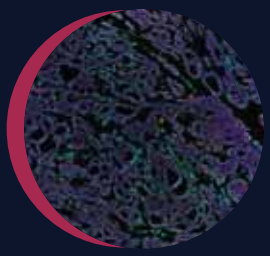
Tonsil

Brain



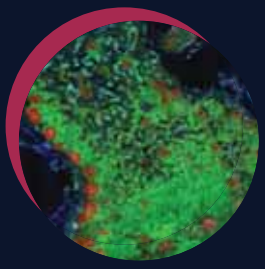


Lung



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		 PhenoImager® 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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akoyabio.com • info@akoyabio.com

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