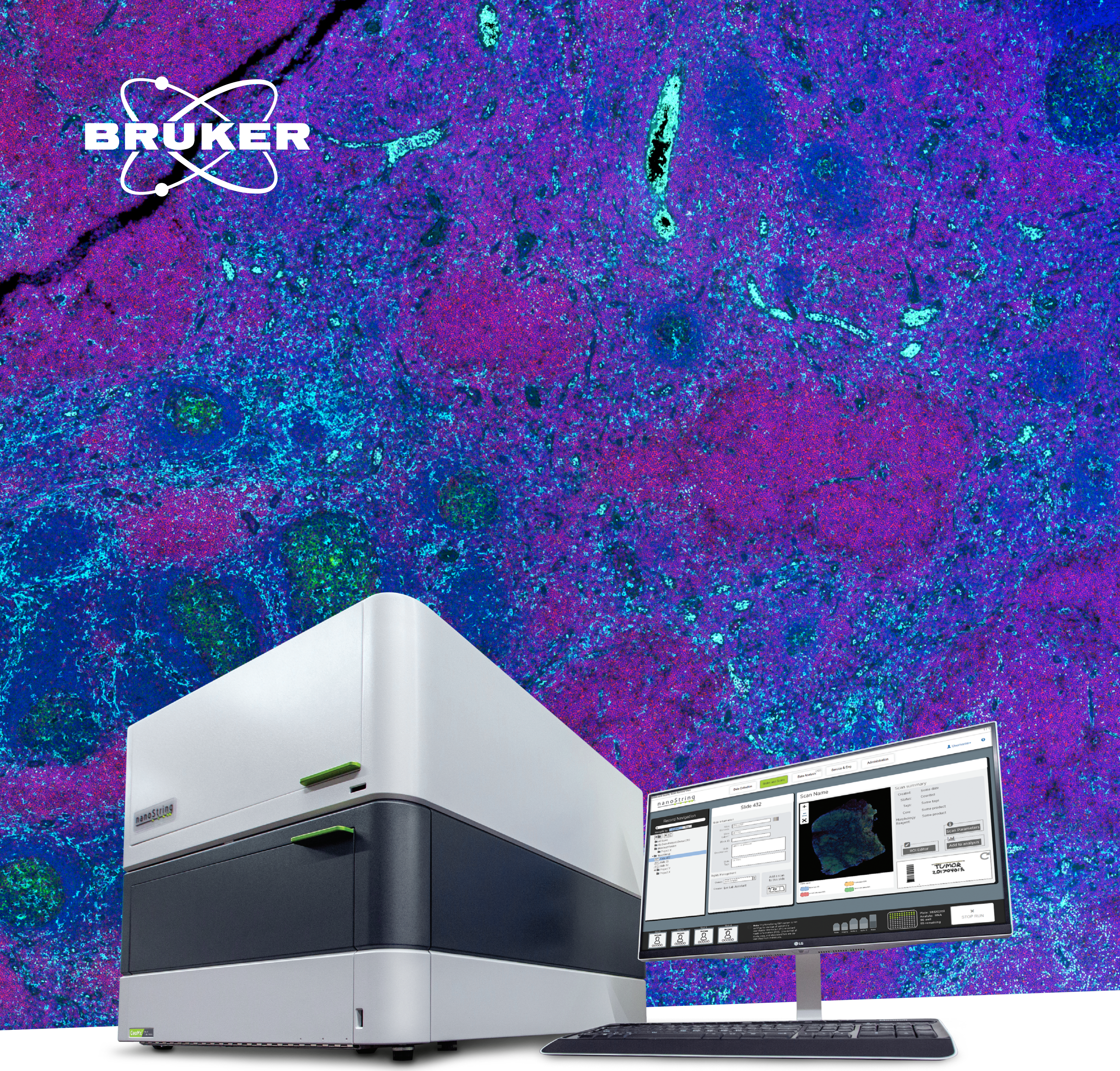


BRUKER SPATIAL BIOLOGY

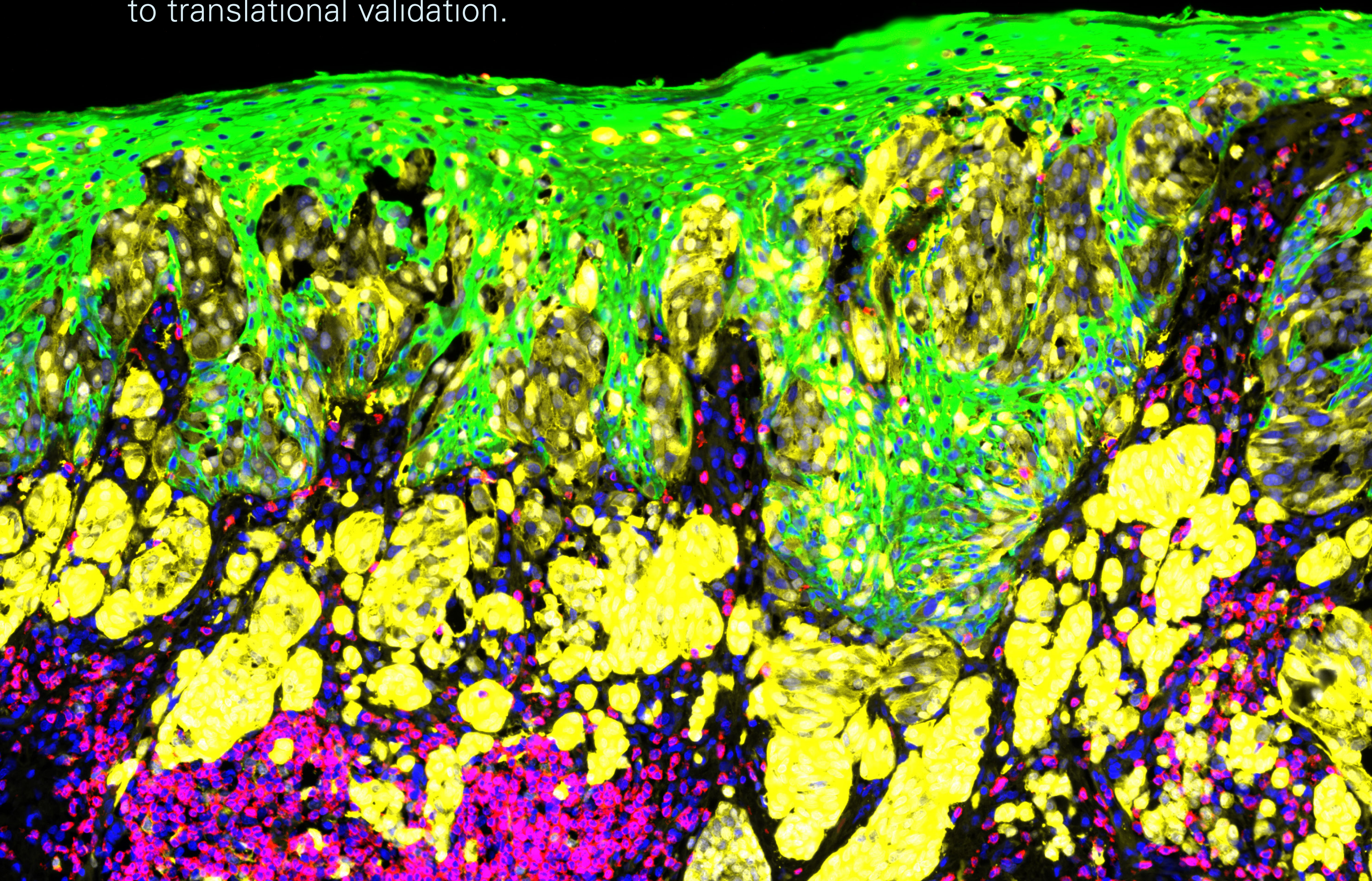
GeoMx® Digital Spatial Profiler

High-plex spatial multiomics for mechanistic biomarker discovery

MECHANISTIC SPATIAL MULTIOMICS

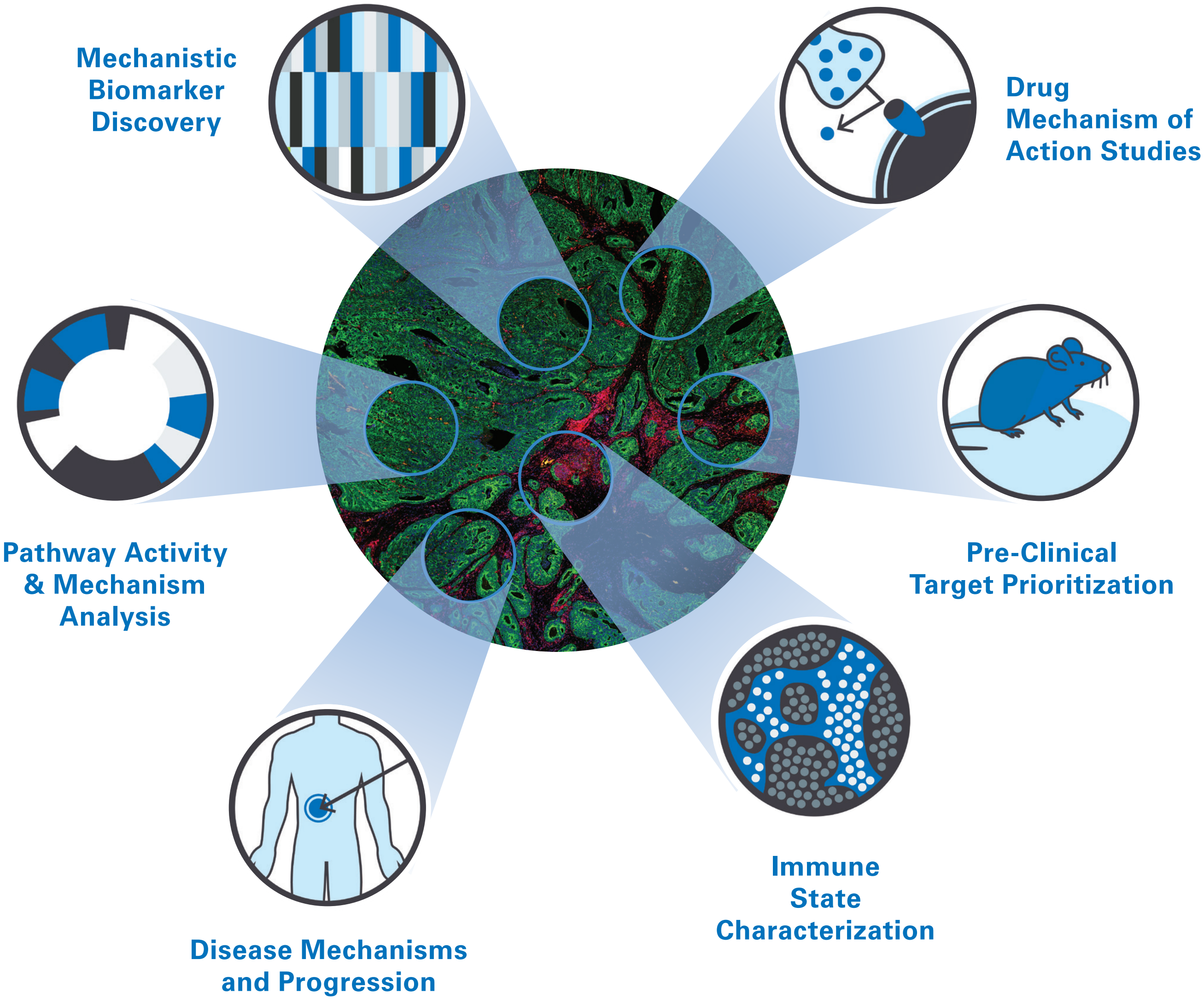
Directly measure pathway activity with unmatched spatially resolved multiomics

The GeoMx Digital Spatial Profiler (DSP) combines whole transcriptome profiling with high-plex protein and PTM analysis on the same tissue regions, enabling direct measurement of pathway activity. By revealing which biological processes are truly active, GeoMx DSP empowers mechanistic biomarker discovery and accelerates the path from discovery to translational validation.



Built for Mechanistic Discovery at Scale

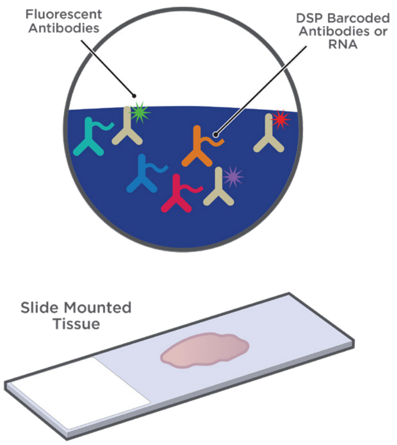
GeoMx DSP is purpose-built for mechanistic discovery, enabling researchers to move from RNA-based hypotheses to direct measurement of pathway activity. By combining whole transcriptome, protein, and PTM profiling at scale, GeoMx DSP supports biomarker discovery, mechanism-of-action studies, and pathway activity analysis across large cohorts.



One Workflow. Unmatched Spatial Multiomic Coverage

Measure RNA, protein, and pathway activity from the same tissue section

GeoMx DSP uses a single workflow to measure RNA, protein, and pathway activity from anatomically defined regions of interest. By preserving spatial context while enabling quantitative multiomic analysis, GeoMx DSP supports interrogation of biology without compromising coverage, plex, or throughput.



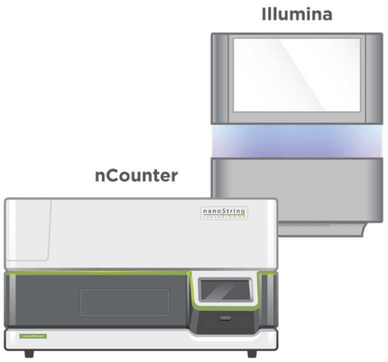
1

Sample Prep
Any sample, FFPE or fresh frozen, use any morphology marker, detect RNA and/or Protein.

* Can be automated

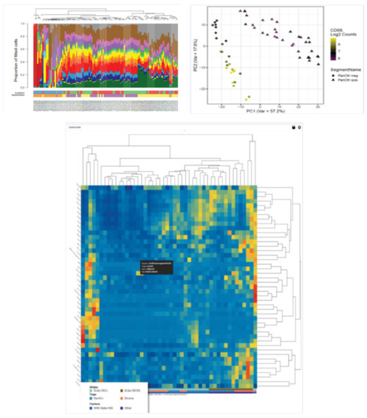
2

Profile
Image and profile RNA and Protein with GeoMx DSP.



3

Count
Count barcodes on the nCounter® Analysis System or sequence with NGS.



4

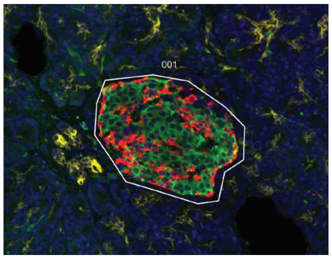
Interpret Biology
Pre-defined data processing pipelines and interactive data analysis accelerate biological insight.

Biology-Informed Spatial Precision

Enrich for relevant biology while preserving spatial context

Geometric Profiling

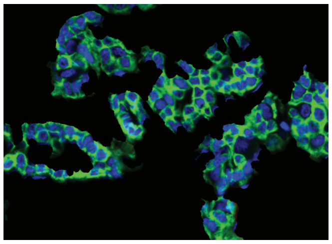
Define regions of interest to isolate and compare biologically distinct tissue structures



The Islet of Langherans is geometrically profiled with Insulin, glucagon and PanCK morphology markers.

Segment Profiling

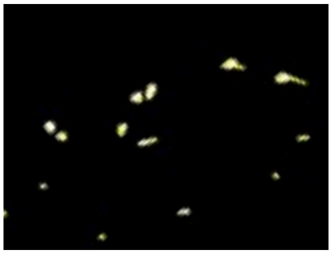
Separate and analyze distinct biological compartments within the same region to uncover cell-type-specific activity



A 5 µm section of kidney depicts the proximal convoluted tubule. This section has been segment profiled guided by CD10 and CD31 morphology marker staining.

Cellular Profiling

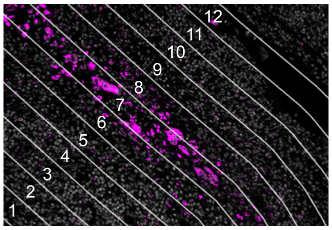
Resolve protein expression in rare cell populations and niches to detect biologically meaningful signals.



Paneth Cells from the Colon, stained with morphology marker 5-HT.

Conture Profiling

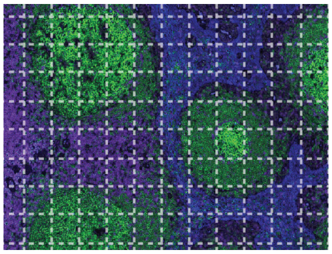
Measure how spatial proximity influences pathway activity and microenvironment interactions.



The invasive margins of two colorectal tumor samples are analyzed using contour segments extending into the tumor and outside the tumor into the stroma and profiled with 1400+ RNA probes with NGS read out.

Gridded Profiling

Systematically map spatial variation to identify localized biological signals across tissue.



Gridded protein profiling of a tonsil section, stained with morphology markers CD3, CD20 and PanCK.

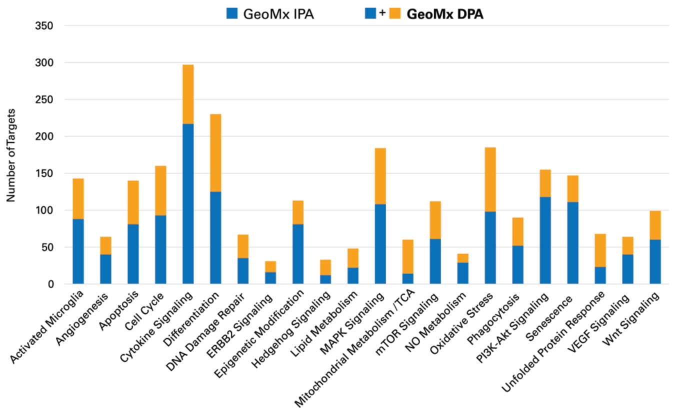
Isolate specific cell populations and niches to reduce noise and reveal true biological signals.

GeoMx Discovery Protein Atlas

Unmatched antibody-based spatial profiling for measuring pathway activity

The GeoMx Discovery Proteome Atlas (DPA) enables quantitative measurement of more than 1200 proteins and post-translational modifications within spatially defined regions. Integrated into the GeoMx workflow, DPA allows researchers to directly assess pathway activity and move from RNA-based hypotheses to functional validation within the same tissue context.

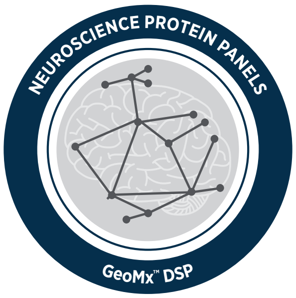
- Curated content
- 120+ biological processes
- 130+ post-translational modifications
- Single-cell resolution
- Co-detection with RNA

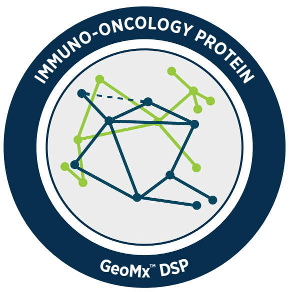


Explore more GeoMx protein assays

For targeted discovery, nCounter readout assays are modular and optimized for robust performance across a variety of sample types. Our NGS readout panels enable more modularity in instrument readout, and all assays are customizable to meet your research needs.

nCounter readout





NGS readout

VALIDATED ACROSS
1200+ PROTEIN TARGETS

Spatial Antibody-Based Profiling, Engineered for Discovery

Measure protein expression and pathway activity with confidence using extensively validated antibodies

High-plex protein profiling demands more than scale, it requires confidence in measuring biology in action. GeoMx protein assays are engineered with multi-layered validation to ensure quantitative performance, reproducibility, and concordance with orthogonal methods. This rigor enables researchers to trust protein and PTM measurements as accurate readouts of pathway activity, supporting confident biological and mechanistic interpretation.

1

Panel-Level Performance

Multiplexed antibody panels evaluated across normal and tumor TMAs and cell lines

2

Clone-Level Validation

Single-vial testing ensures specificity and performance prior to multiplexing

3

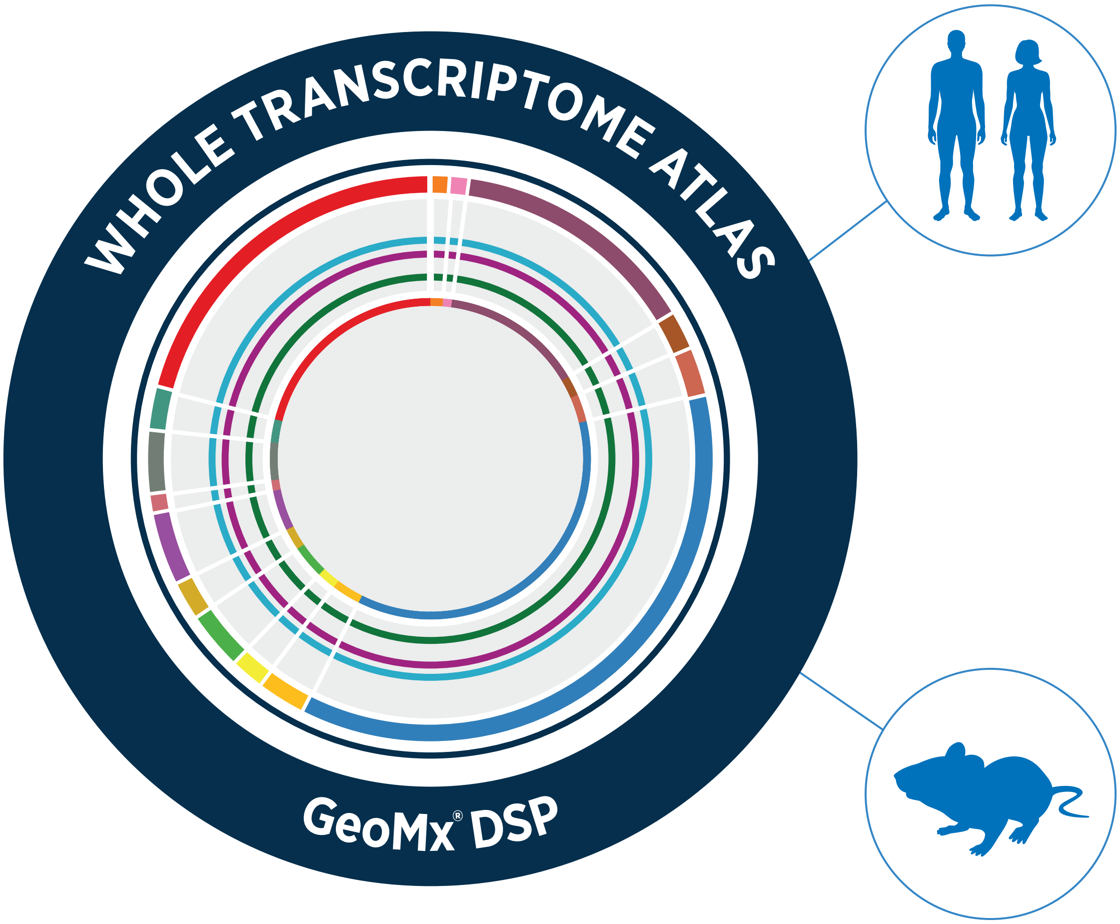
Orthogonal Benchmarking

Protein and PTM measurements benchmarked against RNA-seq and mass spectrometry reference datasets

Whole Transcriptome Profiling for Scalable Spatial Discovery

Profile 18,000+ transcripts with high-throughput, cost-effective spatial gene expression

The GeoMx Whole Transcriptome Atlas (WTA) enables unbiased spatial profiling of 18,000+ genes across human and mouse tissues, supporting high-throughput, cost-effective gene signature discovery at scale. By combining whole transcriptome breadth with biology-driven ROI selection, GeoMx DSP allows researchers to efficiently profile relevant tissue regions across large cohorts and uncover gene expression programs driving disease biology.

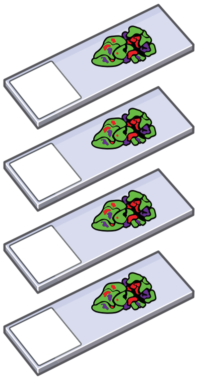


When combined with high-plex spatial protein and PTM profiling, whole-transcriptome RNA provides complementary context to interpret pathway activity and refine biological hypotheses. Together, these data enable mechanistic insight and more confident biomarker discovery.

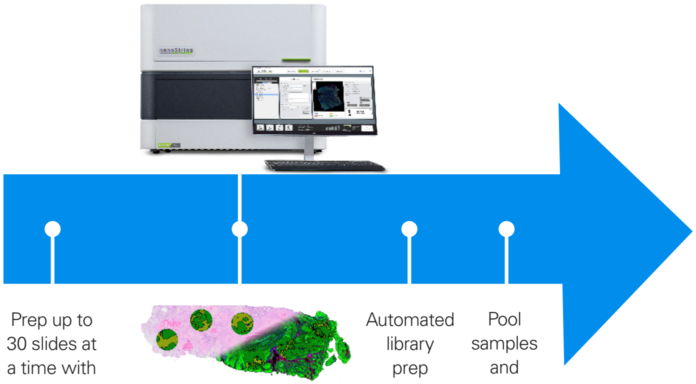
Scale Mechanistic Discovery Across Cohorts

High-throughput, reliable spatial multiomics for large-scale studies

Large Scan Area



Automated Workflow



Prep up to 30 slides at a time with <1 min hands-on time each

AI-driven ROI selection and segmentation

Automated library prep

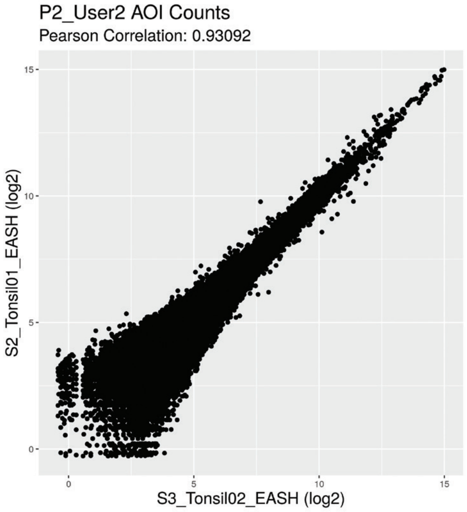
Pool samples and automate secondary analysis

20-40 slides/week
100+ samples/week

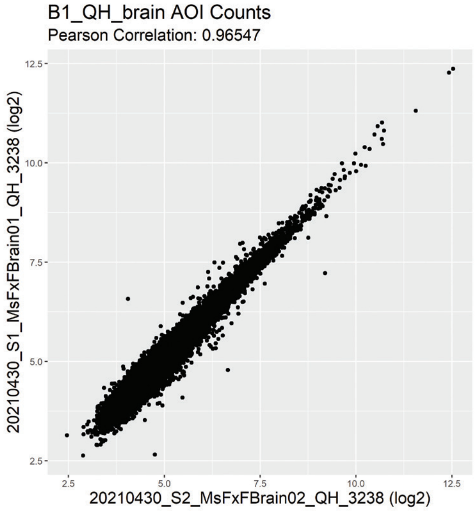
Consistent Results, Reliable Answers

Multi-Sample Analysis and Cohort Studies Made Easy with Unmatched Reproducibility and Scalability

Human FFPE Tonsil



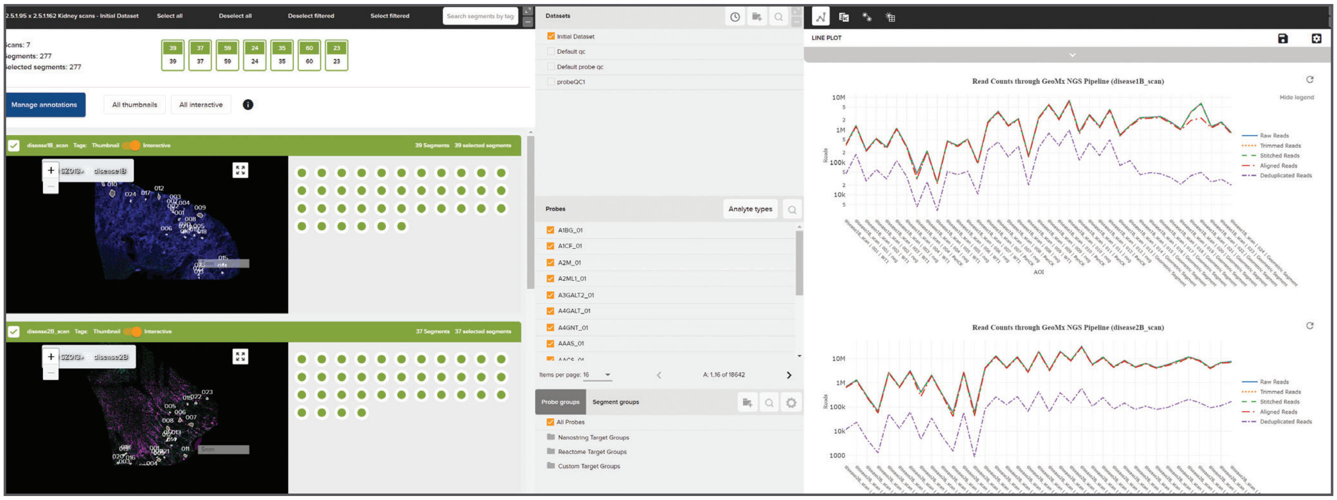
Mouse Fixed Frozen Brain



Interpret Biology, Not Just Data

GeoMx® Data Analysis Suite (DSPDA)

DSPDA is an interactive data analysis suite that connects quantitative data to spatial context to provide a seamless experimental workflow.



Visualize your counts based on your ROI selection

Data QC and normalization

Visualize pathway analysis, differential expression, heatmaps and more!

GeoScript™ Hub

Bruker Spatial Biology has validated and released code packages to the open-source community; Explore GeoScript Hub to see how these tools can be used to configure data analysis pipelines.

Normalization for Protein

RNA Negative Normalization

Spatial Decon

Dimension Reduction

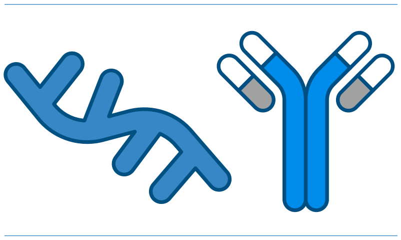
Volcano Plot

Cell-Type Contouring

Learn more brukerspatialbiology.com/products/geomx-digital-spatial-profiler/geoscript-hub/

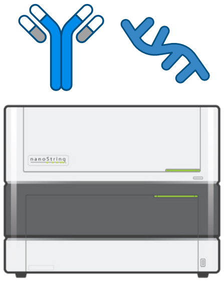
From Discovery to Translation, Faster

Confidently generate spatial multiomic data from your first experiment



Proven Assays and Validated Content

Curated RNA and protein panels built for discovery-scale spatial biology, with rigorously validated reagents and documented performance.



Guided Experimental Workflows

Intuitive ROI selection and standardized multiomic protocols producing reproducible results across users and projects.

Integrated Analysis Environment

Built-in spatial visualization, quality control, and downstream analysis tools streamline interpretation from raw data to biological insight

Expert Enablement & Global Support

Applications scientists, training resources, and ongoing support ensure success from onboarding through advanced discovery programs.

GeoMx DSP is designed to move researchers from discovery to translational insight by enabling reproducible, scalable measurement of biology. By combining validated assays, integrated workflows, and expert support, GeoMx DSP accelerates the path from hypothesis to mechanistic understanding and downstream validation.

This end-to-end ecosystem enables researchers to move faster, from initial setup to biological insight, without compromising data quality, reproducibility, or scale.

Product Specifications

Category	Feature	Specification
GeoMx® DSP Instrument	Sample Throughput	Up to 8 slides/day (at 12 ROIs per slide, 10 mm by 10 mm scan area)
	Minimum UV Illumination Area	10 µm diameter
	Resolution	20X 0.45 NA objective
	Imaging Modes	Fluorescence
	Imaging Channels (representative dyes)	4 fluorescent channels: (FITC/SYTO13/AF488), (CY3/AF532/PE/SYTO83), (TxRed/AF594), (CY5/AF647/Dylight 650)
	Imaging channels (em center wavelength/bandpass)	516/23, 564/15, 623/30, 683/30
	Slide Capacity	Four 1 x 3 inch slides
	On Instrument Data Storage Capacity	8TB (> 300 10 mm x 10 mm 4 channel slide images)
	Long Term Data Storage	Customer-provided fileshare (local network)
	ROI Definition	On-instrument or via web browser
	ROI Selection	Geometric, Segmentation, Cellular Phenotype, Contouring, Gridding
	Instrument Dimensions	Actual: 30" x 29" x 24"/76 cm x 73 cm x 61 cm
	Instrument Weight	220 lb/100 kg
	Power source	110-240 VAC, 50/60Hz, 440VA
	Readout Instrument Compatability	nCounter Analysis System, Illumina NGS
	Image Export	Single-channel pyramidal TIFF; monochrome or color images (JPEG, PNG, WEBP); multi-cannel pyramidal, stitched OME-TIFF
GeoMx® DSP Reagents	Supported Analytes	Protein and RNA
	Chemistry Multiplexing Platform Capabilities	Up to 96 plex for nCounter, 20K plex for NGS
GeoMx® Data Analysis Software	Data Visualization and Analysis	Intuitive and interactive interface that automatically connects quantitative readout with spatial information. Workflow includes QC and normalization. Visualization include clusters, heatmaps, volcano plots, bar graphs, box plots, strip plots, scatter plots, correlation plots.
	Data Export	.xlsx file format for raw or calibrated data
	Image Export	.svg format for visualization plots

Bruker Spatial Biology | For more information, visit brukerspatialbiology.com/GeoMxDSP

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