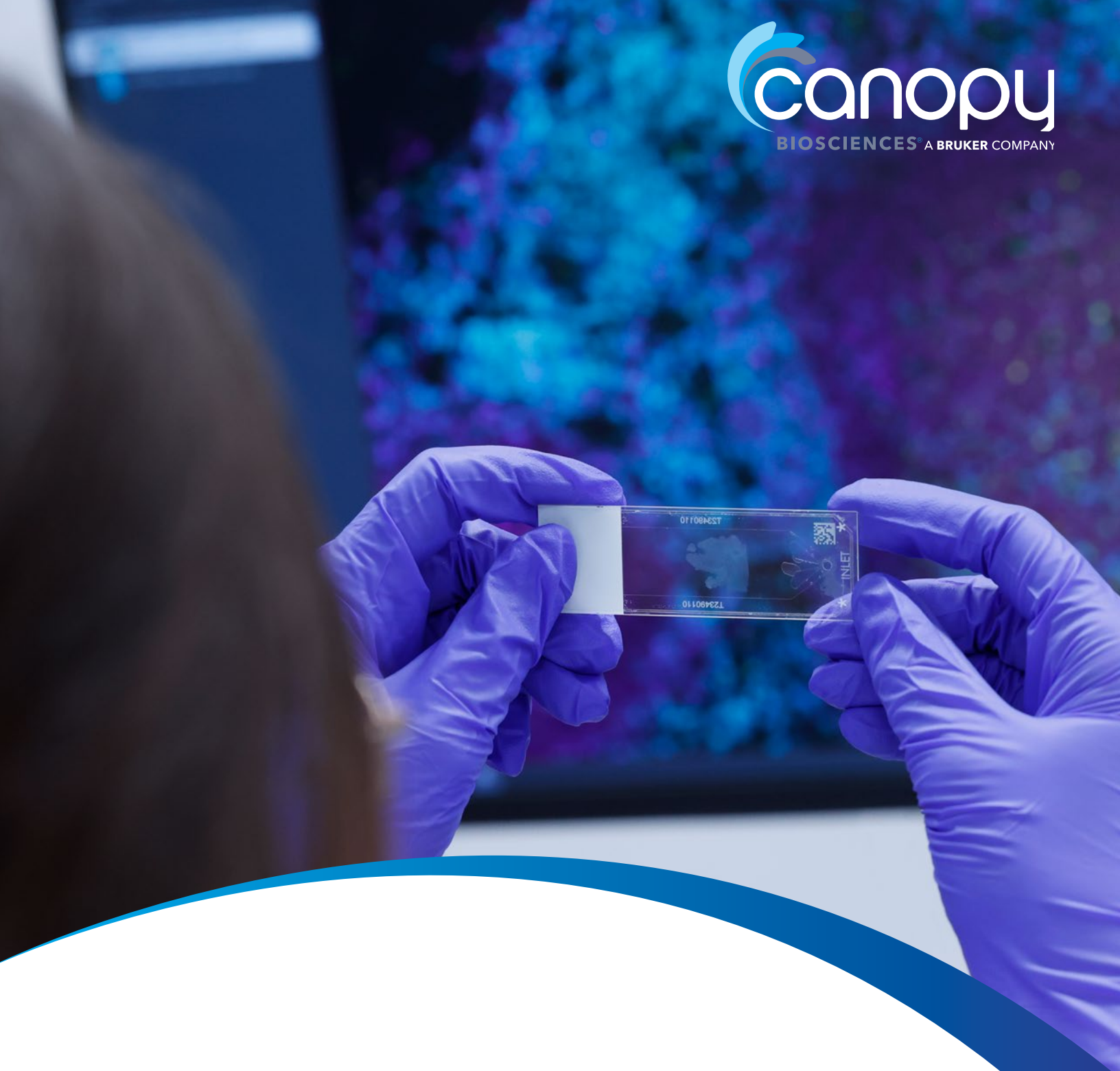


canopy BIOSCIENCES® A BRUKER COMPANY

Canopy Spatial Services™

For Spatial Biology & Single-Cell Omics

Your Access to Innovation

Cutting-Edge Services for Spatial Biology and Single-Cell Omics

Canopy Spatial Services is a comprehensive suite of spatial biology and single-cell analysis services through Canopy Biosciences®, A Bruker Company. By integrating a curated collection of technologies to complement our flagship CellScape™ Precise Spatial Multiplexing, we provide a unique toolset for biopharmaceutical research, custom assay development, clinical sample testing, and quality data acquisition and reporting. With a CLIA-certified laboratory, our expert scientists will help you overcome complex problems and transform scientific discovery into new treatments, disease indications, and biomarker development with efficient assay optimization and problem-solving.

We have multiple laboratories with key areas of expertise:

- Spatial proteomics, leveraging our CellScape instrument
- Spatial transcriptomics for oncology, immunology, and immuno-oncology applications
- Histology and spatial biology for biomarker discovery
- Genomics, transcriptomic, and single-cell transcriptomics

Partner with us to accelerate your research, knowing we have the flexibility and expertise to perform your experiment from start to finish.

Conclude with Confidence

Orthogonal Validation

Support your hypotheses from other multi-omics methods using our CellScape Precise Spatial Multiplexing instrument. Generate ideas from spatial transcriptomics and other RNA expression experiments and then leverage CellScape to bring your concept to conclusion.

As the creators of CellScape, we have extensive expertise in designing and executing spatial phenotyping assays on tissue and cell suspension samples. Utilize our experience to efficiently incorporate spatial biology into your next biomarker discovery project or clinical trial.

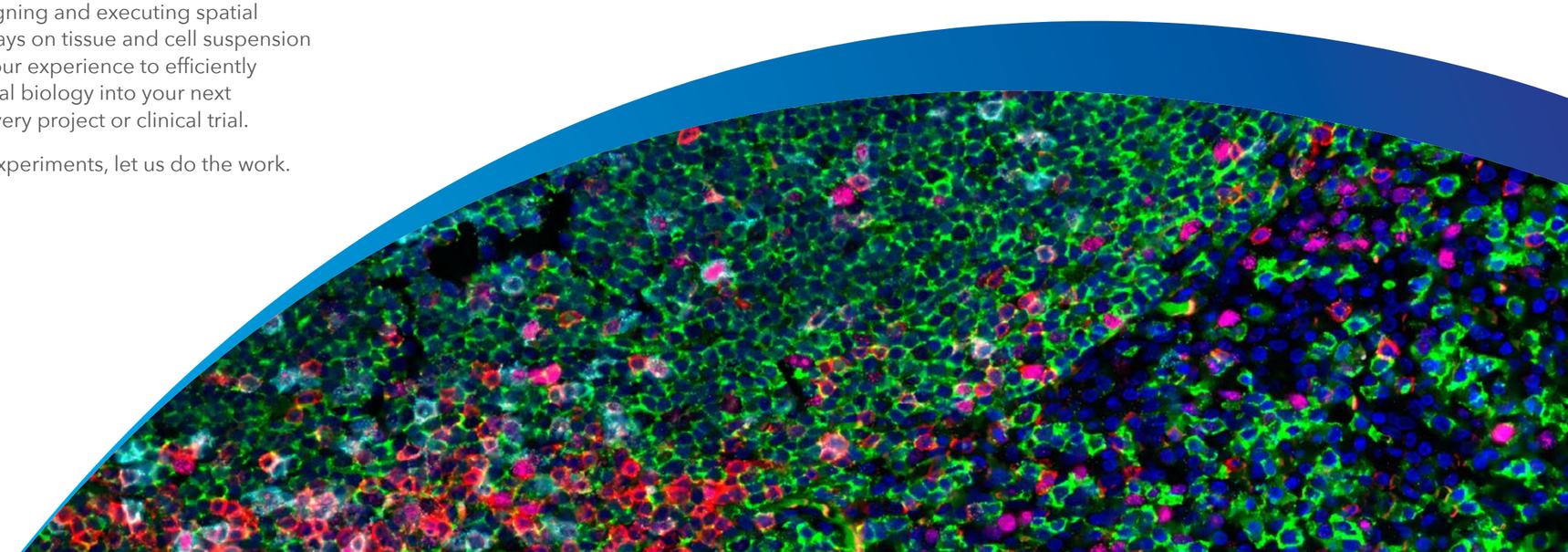
You design the experiments, let us do the work.

End-to-End Solutions

Find the right service to suit the needs of your experiment.

Canopy Spatial Services offers a broad portfolio of service offerings focused on spatial biology and single-cell omics. Our full suite of complementary technologies is used to detect and analyze proteins and nucleic acids, leading to a more wholistic understanding of cellular diversity and interaction.

	Analyte		Resolution	
Service	**RNA**	**Protein**	**Spatial**	**Single-cell**
CellScape™ Precise Spatial Multiplexing		✓	✓	✓
NanoString CosMx™ SMI	✓	✓	✓	✓
NanoString GeoMx® DSP	✓	✓	✓	
NEW: Vizgen MERSCOPE®	✓		✓	✓
IHC		✓	✓	
FISH/ISH	✓		✓	✓
10x scRNA-Seq	✓			✓
NanoString nCounter®	✓			
Illumina RNA-Seq	✓			



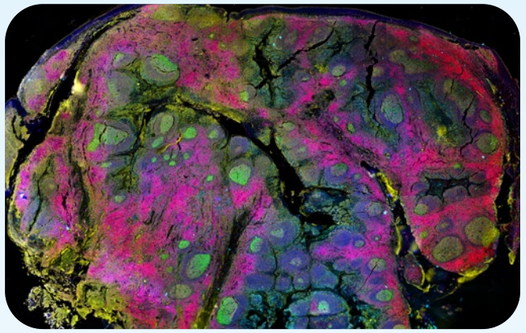
CellScape Precise Spatial Multiplexing

From Canopy Biosciences- A Bruker Company

As the inventors of the CellScape platform, we utilize years of experience in developing multiplexed spatial imaging technologies to bring the power of spatial biology to your research.

CellScape Precise Spatial Multiplexing facilitates single-cell, high resolution imaging and quantitative phenotyping for any tissue or cell suspension. This technology enables profiling of protein expression data within the context of tissue architecture, tissue microenvironments, and cell-cell interactions. With pre-validated antibody panels and assay kits available to capture a wide range of biomarkers as well as expertise with custom assay development, we have the capabilities for in-depth analysis of your tissue or cell samples.

We have helped researchers across academia and biopharma incorporate spatial biology from the early phases of discovery to supporting their clinical trials, and we can help your lab bring spatial context to your biomarker research.



Whole tissue imaging of human FFPE tonsil using ChipCytometry. The tissue sample is stained with 15 markers using the VistaPlex™ Spatial Immune Profiling Kit for CellScape to profile the tissue microenvironment and immune infiltration. Biomarkers are detected and quantified at single-cell resolution while retaining spatial information.

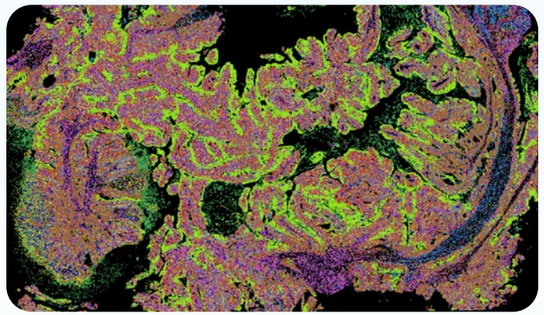
NOW AVAILABLE: MERSCOPE

From Vizgen

Leveraging Multiplexed Error-Robust Fluorescence *in situ* Hybridization (MERFISH), MERSCOPE accurately quantifies and identifies the spatial distribution of target RNA transcripts in single cells without the need for downstream sequencing. We assist in mapping individual cells in your samples to maximize the impact of your data.

MERSCOPE enables localization of RNA transcripts at the subcellular level, with the capability to detect even low-expressing genes. Capable of interrogating FFPE or FF samples from human, mouse or other species, MERSCOPE is a versatile choice for spatial transcriptomics.

We offer both panels and cost-effective custom assay design for hundreds of your target genes.



MERSCOPE® Web Visualizer Software enables interactive analysis of detected transcripts, segmented cell boundaries, and high-resolution images.

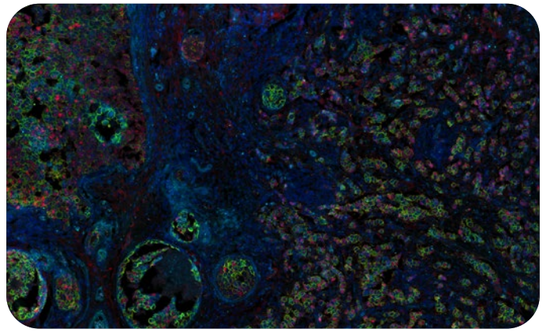
GeoMx Digital Spatial Profiler (DSP)

From NanoString- A Bruker Company

As a NanoString premier partner, Canopy was one of the earliest adopters of the GeoMx technology. With a portfolio of transcriptomic and protein panels, GeoMx DSP enables regional spatial analysis paired with molecular profiling for a better understanding of tumors and tumor microenvironments.

Morphologically guided ROI selection with markers to highlight the tumor and immune cells is followed by molecular profiling of RNA transcripts. We assist in ROI selection and provide training on the analysis suite for GeoMx so our clients can overlay spatial analysis with gene expression data for a holistic understanding of tumor biology.

The morphology markers from NanoString broadly identify tumor and immune compartments, and we have developed our own catalog of application-specific markers for use in the GeoMx assay as well as the validation workflow for additional customer-specific markers.



Triple positive breast cancer sample scanned on the GeoMx with markers for nucleic acid (blue), HER2 (green), progesterone receptor (red), and estrogen receptor (cyan).

CosMx Spatial Molecular Imager (SMI)

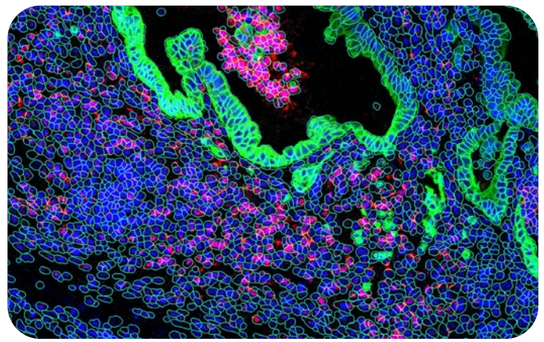
From NanoString- A Bruker Company

The CosMx SMI is the newest platform launched by NanoString and enables spatial transcriptomics with single-cell resolution. Partner with us to leverage this technology and explore cell typing, pathway analysis, cell functions, and cell-cell interactions.

Use pre-designed high plex panels for quick results:

- Human 6K Discovery RNA Panel
- 1K Universal Cell Characterization RNA Panel
- 64-plex Human Immuno-oncology Protein Panel
- 1K Mouse Neuroscience RNA Panel
- 68-plex Mouse Neuroscience Protein Panel

Send your FF or FFPE tissue samples to us and we will provide your lab with an end-to-end solution for single-cell spatial profiling projects.



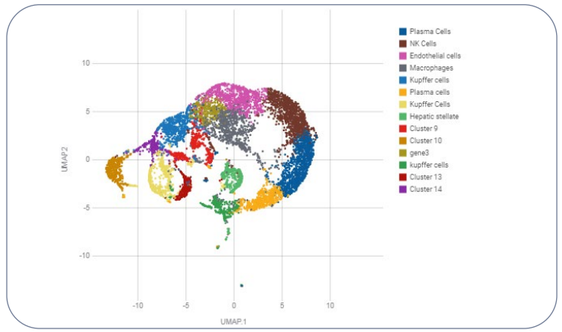
Cell segmentation using CosMx SMI.

Single-Cell RNA-Sequencing

Using 10x Genomics Chromium® X Series

The 10x Genomics Chromium X platform allows for single-cell transcriptome sequencing for up to tens of thousands of cells. Single-cell RNA-seq provides comprehensive and unbiased gene expression profiling of heterogenous cells, including tumor and immune cells. This level of throughput for transcriptional analysis enables researchers to understand the characteristics of individual cells within a heterogeneous population.

Our end-to-end single-cell RNA-seq service provides a cost-effective and time saving route to acquire data quickly, leveraging both our expertise and our instrumentation. Through our partnership with Rosalind Bio, data analysis with the ROSALIND cloud-based platform enables gene set enrichment, gene clustering, pathway interpretation, and creation of publication-quality figures.



ROSALIND transforms the analysis of single-cell RNA-seq with an end-to-end web-based experience for analysis, interpretation and collaboration. Interactive analyses of single cell clusters reveal biology of cells. UMAP plot provided by Rosalind Bio.

Targeted Gene Expression Profiling

Using NanoString nCounter

The nCounter platform from NanoString is a powerful tool for differential gene expression analysis. With a full catalog of panels for immunology, oncology, neuroscience and other applications, researchers can quantify up to 800 genes per sample with this simple hybridization and digital counting technology. Ideal for FFPE due to the probe design and amplification-free workflow, it is highly reproducible and has been extensively used for pre-clinical and clinical research.

Providing nCounter services for nearly a decade, our extensive expertise in this technology has allowed us to optimize starting material quantity and quality so we can get quality results even from limited or degraded samples. We boast a 2 week turnaround time and offer access to ROSALIND for rapid data analysis.

ROSALIND is our preferred platform for differential gene expression analysis for nCounter and RNA-seq data. In each comparison, clients can access gene lists, gene details and pathway analysis. With dynamic visualization, clients can see gene-specific data across multiple outputs.

RNA Sequencing

Using Illumina NovaSeq™ 6000

The workhorse of transcriptomic research, we offer next-generation sequencing (NGS) services for mRNA-seq, total RNA-seq, and FFPE RNA-seq. We bring a collaborative approach, offering consultative discussion on sample type, library prep methodology and sequencing depth.

RNA-seq is a powerful tool to study the transcriptomic profiles of cell populations, facilitating discovery of transcripts and differentially expressed genes that can be missed by microarray assays. Using ROSALIND for analysis, we can link changes in transcript abundance and biological impacts with pathway analysis. RNA-seq provides both transcript discovery and quantification using the high throughput NGS, allowing a better understanding of the mechanisms responsible for specific diseases or drug responses.

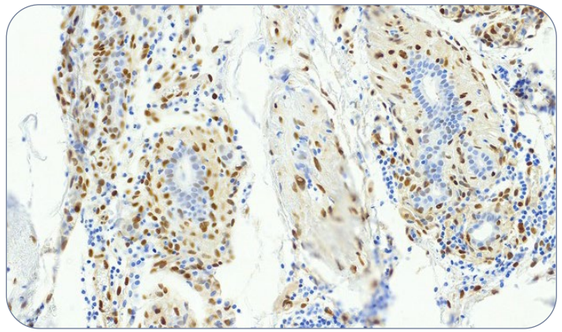
Each comparison has several key pieces of data and analysis available to assess differential gene expression all in a single view. Access pathway analysis from this screen to assess biological impacts of experimental changes.

Histopathology, FISH, and Immunohistochemistry

We operate a CLIA-certified laboratory specializing in immunohistochemistry (IHC), histopathology, and molecular analysis including fluorescence *in situ* hybridization (FISH) for DNA and RNA.

General histopathology service capabilities include tissue processing, slide preparation, IHC staining, immunofluorescent (IF) staining, whole slide scanning, and slide review and tumor scoring by board-certified pathologists.

Our expert scientists process histology slides to evaluate antibodies of interest for specific and non-specific tissue reactivity. We can provide high quality results to support your research projects, to accelerate your team's development work, and to bridge the gap between pre-clinical and clinical applications.



Nuclear staining of a breast cancer sample for phospho-STAT3 (Tyr 705), as phosphorylated STAT3 is the activated form of this transcription factor, which may play a role in malignancy of breast cancer and other tumors.

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