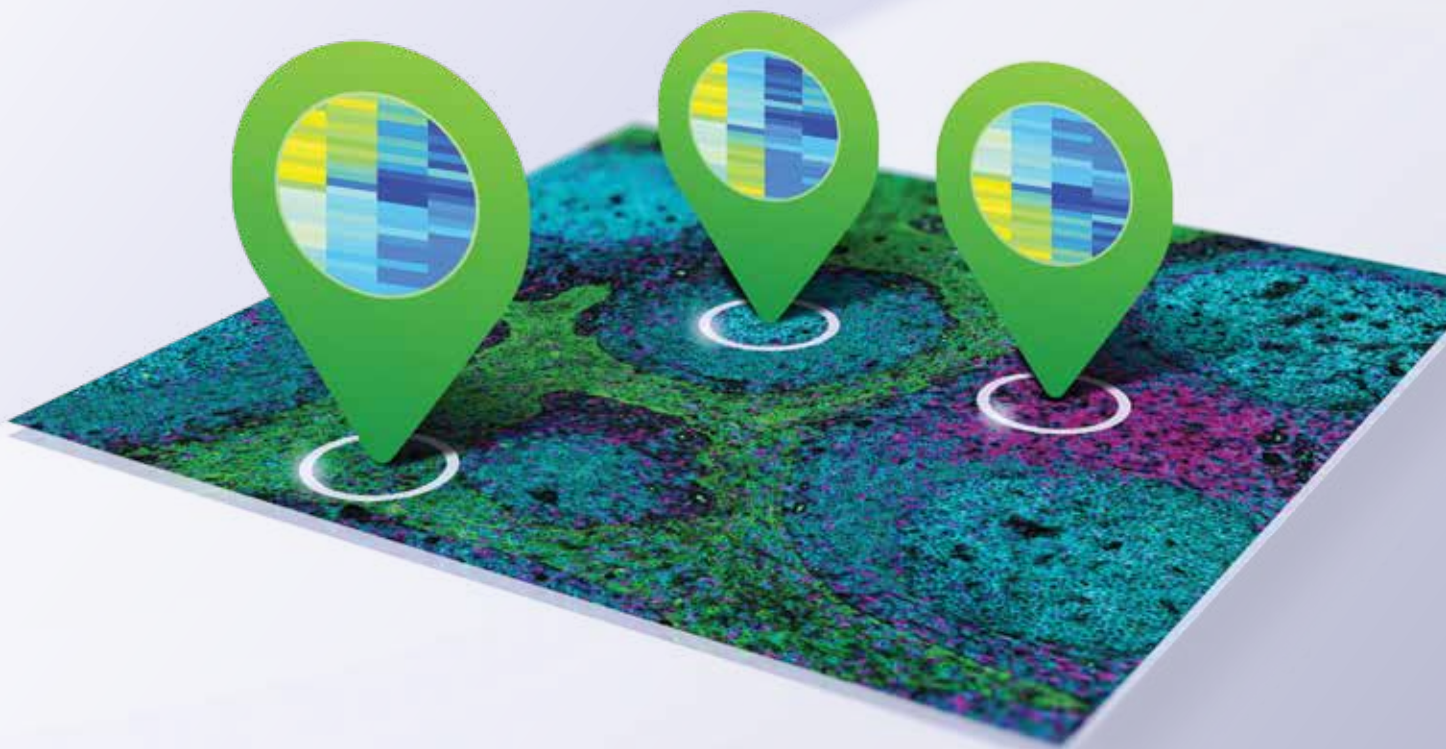


GeoMx™

# Digital Spatial Profiler

Your GPS for Biology



[nanosttring.com](https://nanosttring.com)

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

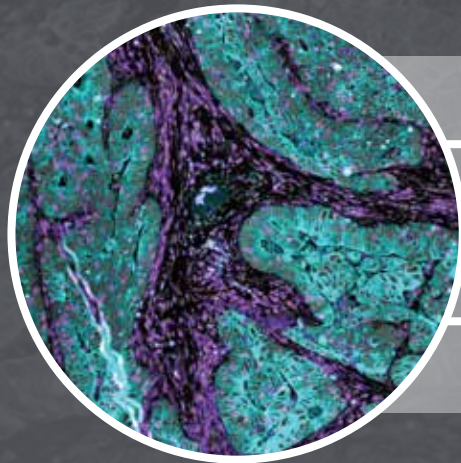
nanosttring™

# Resolving Sample Heterogeneity

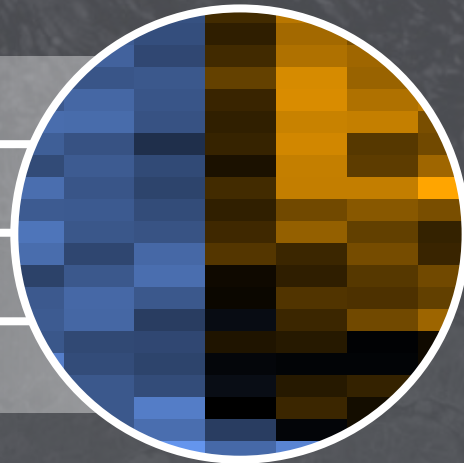
## Spatial information or high-plex: The tradeoff

Understanding tissue heterogeneity is critical to answering key biological questions in translational research. The current tissue analysis paradigm requires a tradeoff between morphological analysis or high plex, sacrificing valuable information or consuming precious samples.

### In situ Visualization Technology (FISH/ IHC)



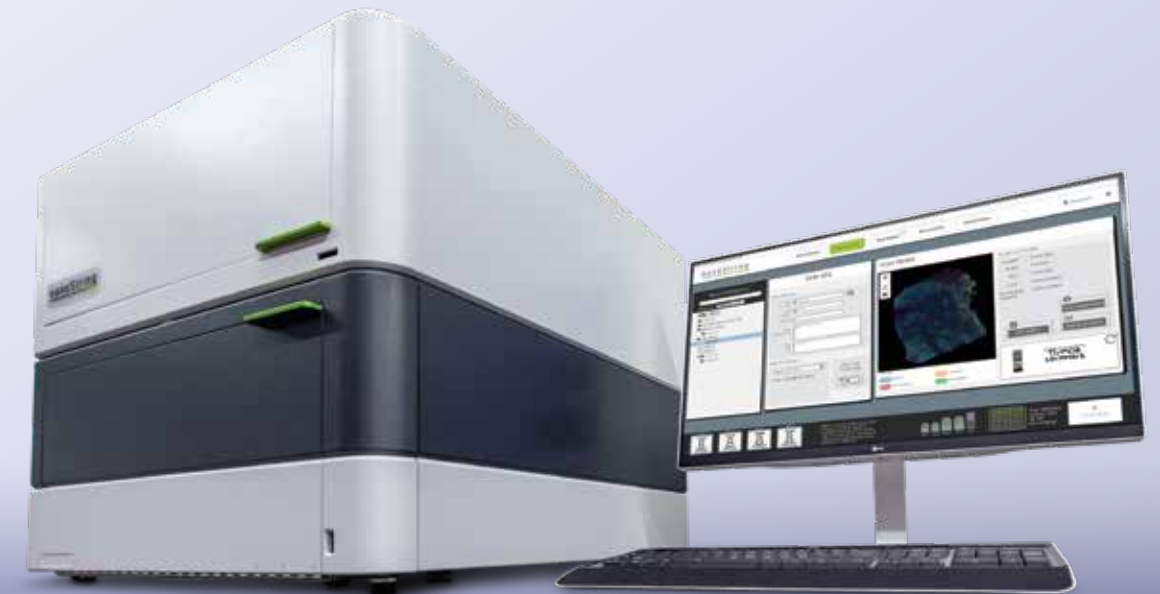
### Molecular Profiling Technologies



+	Spatial	-
-	Plex	+
-	Quantitation	+
-	Precision	+

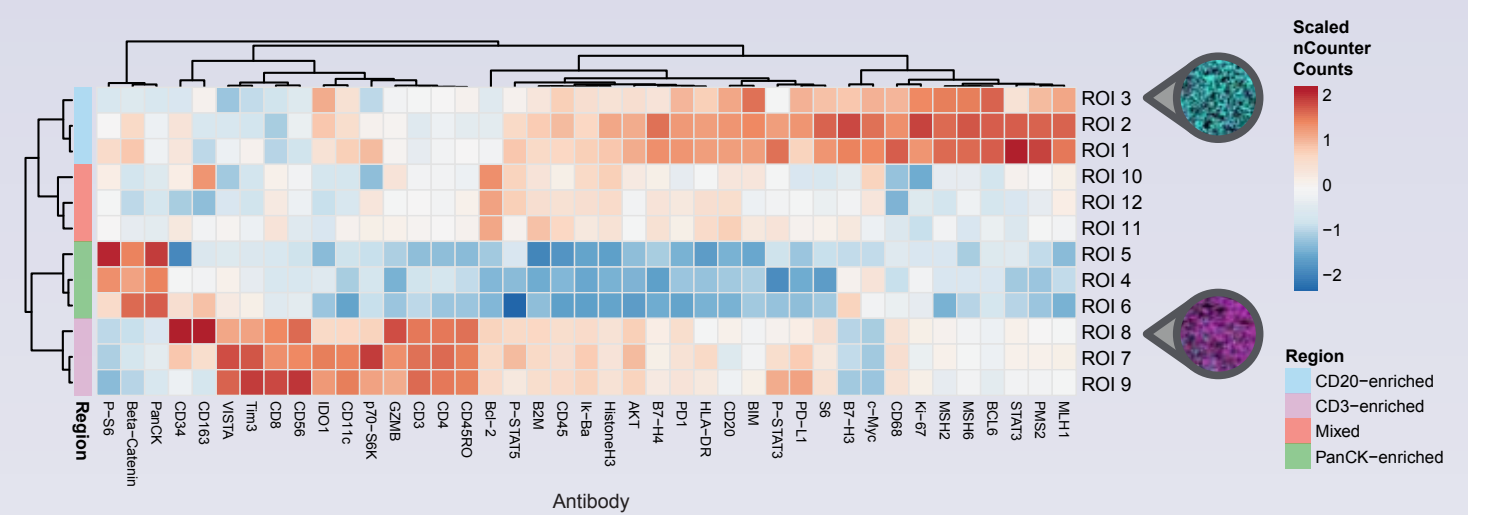
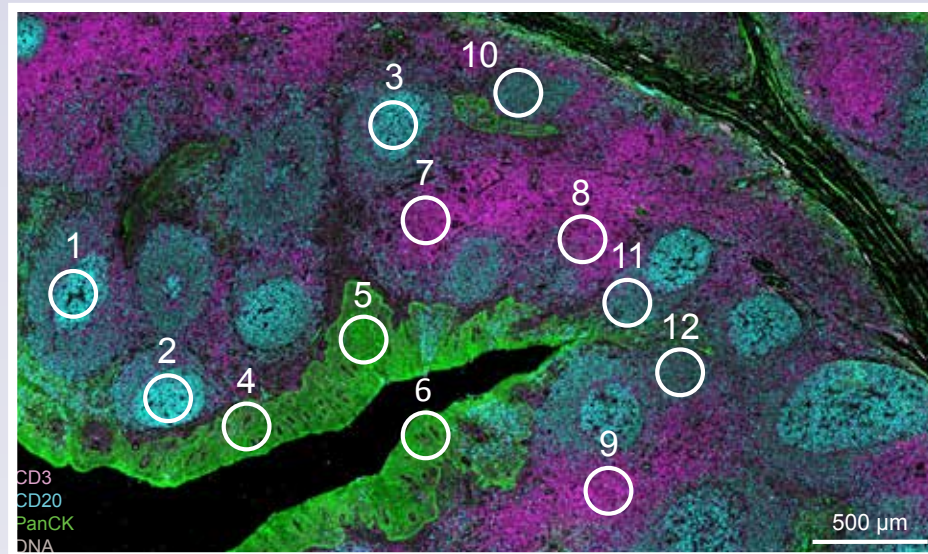
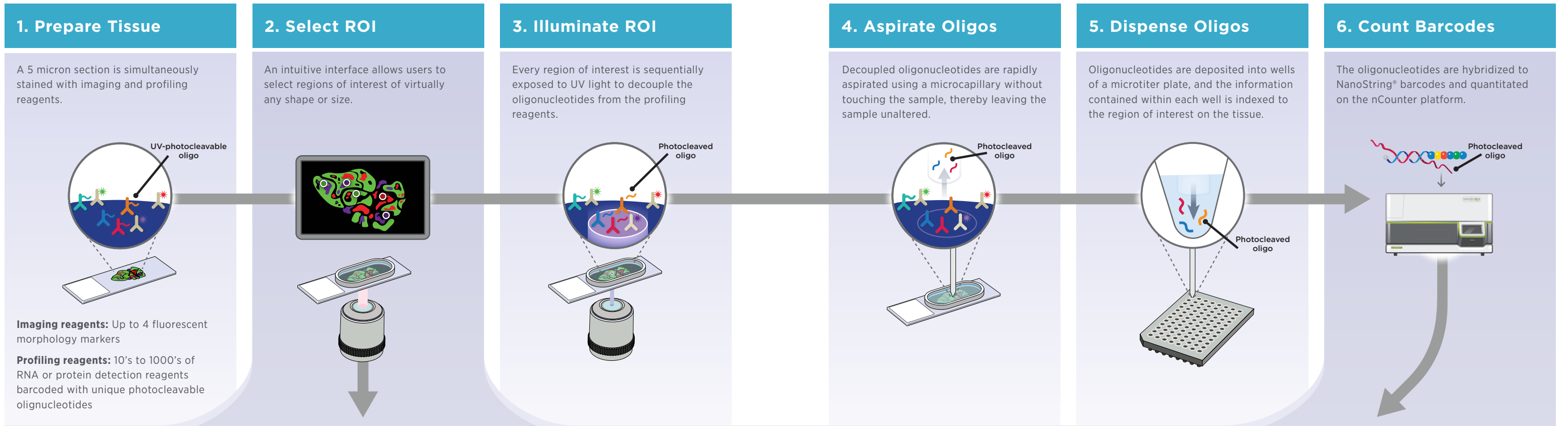
## Introducing GeoMx™ DSP Your GPS for biology

NanoString's GeoMx Digital Spatial Profiler (DSP) combines the best of spatial and molecular profiling technologies by generating a whole tissue image at single cell resolution and digital profiling data for 10's-1,000's of RNA or Protein analytes for up to 16-20 tissue slides per day. This unique combination of high-plex, high-throughput spatial profiling enables researchers to rapidly and quantitatively assess the biological implications of the heterogeneity within tissue samples.



# The Path is Clear

## GeoMx DSP Workflow



# Locate Your Regions of Interest

Tunable, light-directed selection enables dynamic profiling modalities

## Geometric Profiling

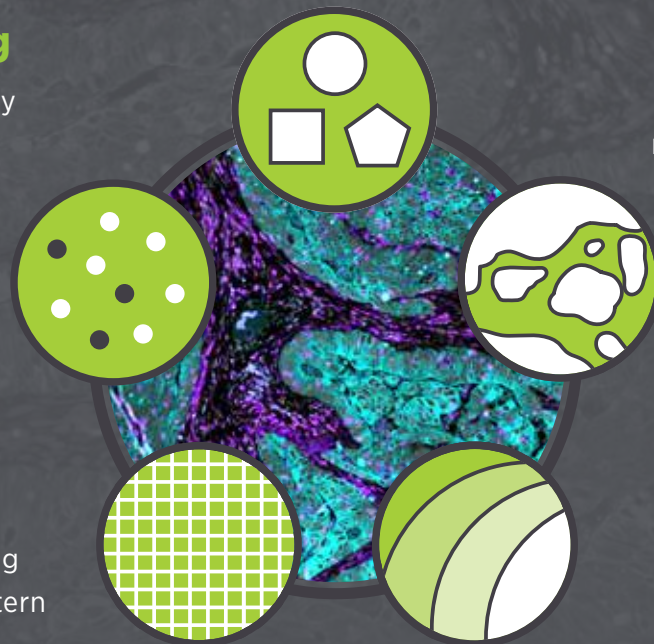
Assess tissue heterogeneity and profile standardized geometric shapes across distinct tissue regions

## Rare Cell Profiling

Cell type-specific morphology markers guide profiling, revealing the function of distinct cell populations

## Gridded Profiling

Perform deep spatial mapping using a tunable gridding pattern



## Segment Profiling

Maximize cellularity using morphology markers to identify and profile distinct biological compartments within an ROI

## Contour Profiling

Evaluate how proximity affects biological response and the local microenvironment around a central structure using radiating ROI

# Biological questions inform modality selection



## Geometric Profiling

*How does the expression of tumor and immune markers differ across a sample?*

Geometric profiling identifies distinct expression profiles across and within specific regions of the tissue



## Segment Profiling

*How does the tumor differ from the tumor microenvironment?*

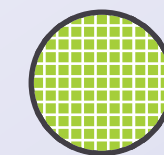
Segment profiling reveals unique tumor and tumor microenvironment molecular profiles



## Contour Profiling

*How does proximity to the tumor or an immune cell population alter biological response?*

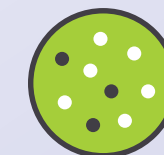
Radiating ROIs surrounding macrophages show distinct expression profiles based on proximity



## Gridded Profiling

*What novel biology is uncovered with deep spatial mapping of the tumor?*

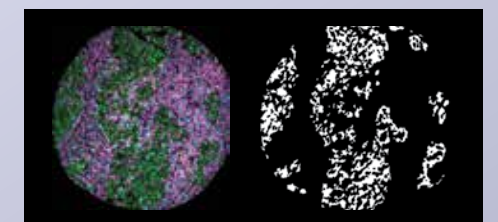
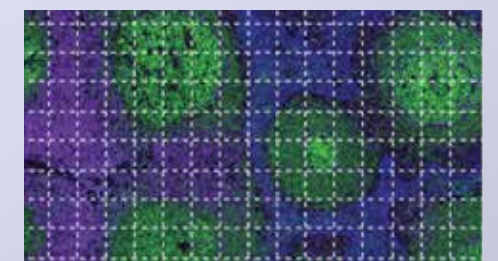
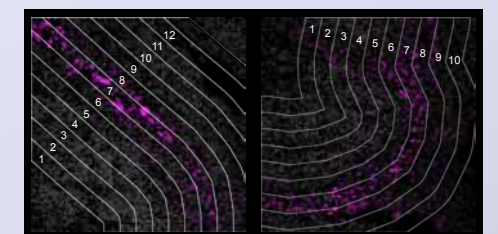
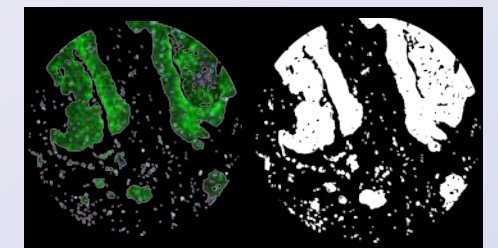
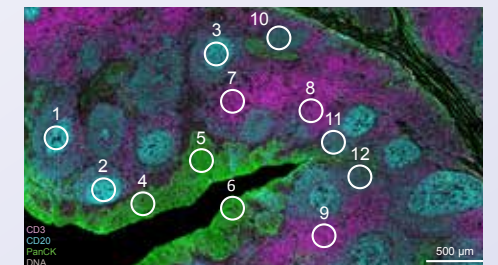
Gridded profiling provides a digital map of the molecular profile of the tumor



## Rare Cell Profiling

*How do rare immune cells impact tumor biology and therapeutic response?*

Isolated immune cell populations show unique expression profiles



# Explore Your Data

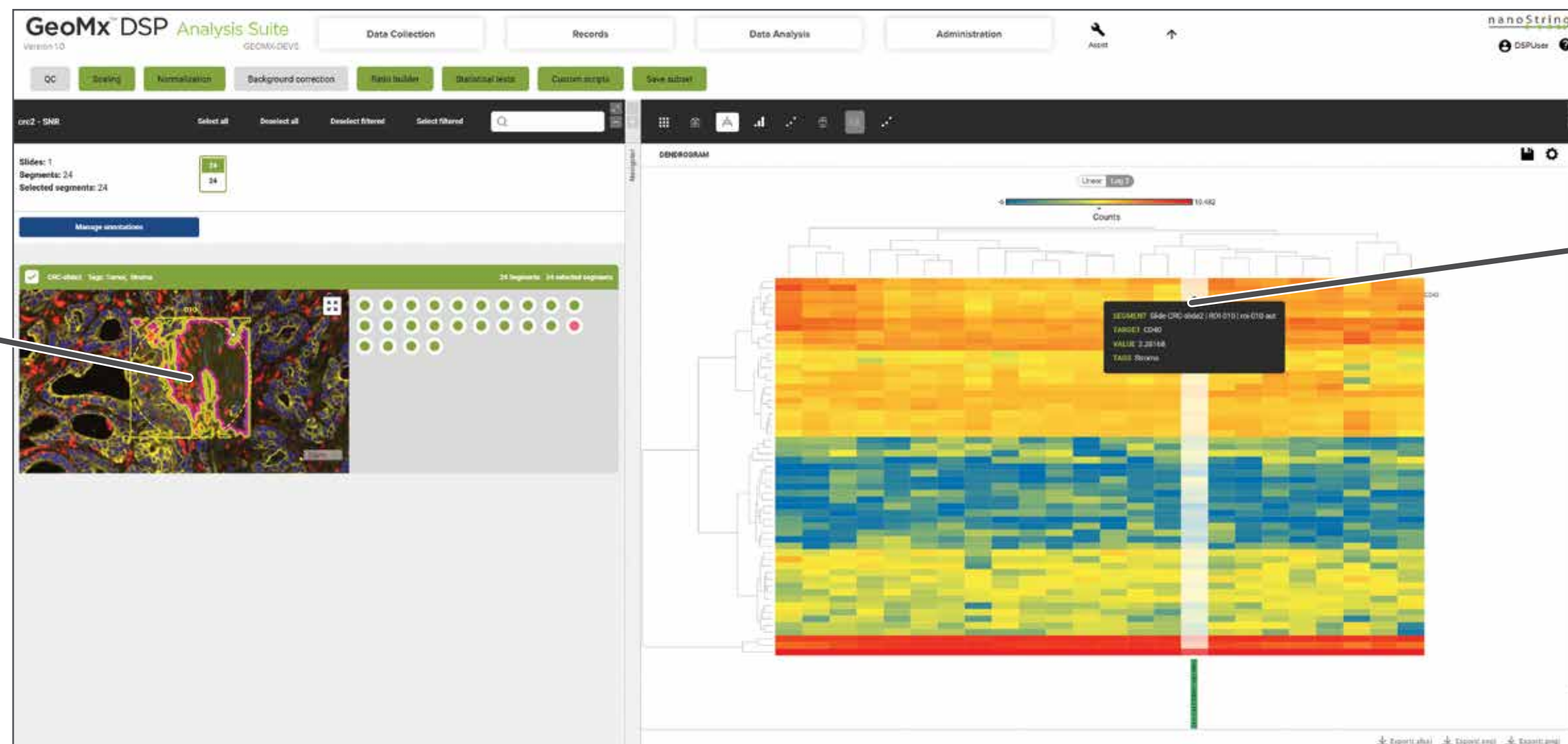
## GeoMx DSP provides an integrated environment

- **Easy to analyze** - Imaging and profiling data is always connected
- **Easy to integrate** - Open portal to import external data sets such as clinical annotations or sequencing data
- **Easy to collaborate** - Multi-user access to data at the same time

### 100% traceability from profiling data to tissue image:

When specific profiling data is selected the GeoMx Data Analysis tool will automatically show the tissue image corresponding to a ROI and vice versa.

Image of ROI  
4 of 24  
(stroma)

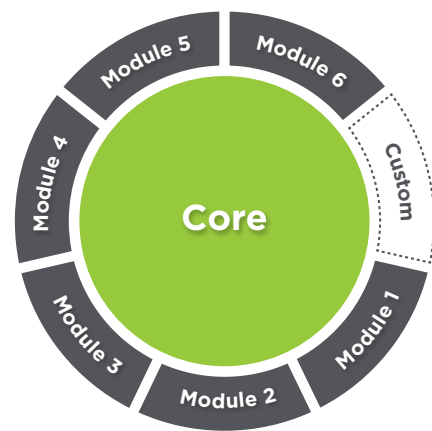


Profiling data  
from ROI  
4 of 24  
(stroma)

# Discover Your Biomarker

## Flexible, pre-verified content to fit a range of research needs

GeoMx assays are modular and optimized for robust performance across samples. Select one core and up to 6 modules to analyze up to 96 targets on a single slide. Available content covers immunology, immuno-oncology, neurodegeneration and neuroinflammation. Additionally, user-defined protein or RNA content can be added using our Protein Barcoding Service and Custom RNA offering.



Available content will cover immunology, immuno-oncology, neurodegeneration, and neuroinflammation with a rapidly growing pipeline.

	Immuno-Oncology	Neuroscience
<b>Protein Cores</b>	Immune Cell Profiling ~20-plex Human/Mouse	Neural Cell Profiling ~20-plex Human
<b>Protein Modules</b>	IO Drug Target ~10-plex Human/Mouse	Alzheimer's Pathology ~10-plex Human
	Immune Activation Status ~10-plex Human	Parkinson's Pathology ~10-plex Human
	Immune Cell Typing ~10-plex Human	
	Pan-Tumor ~10-plex Human	
<b>RNA Cores</b>	Immune Pathways ~84-plex Human	N/A
<b>Custom Modules</b>	Available	Available

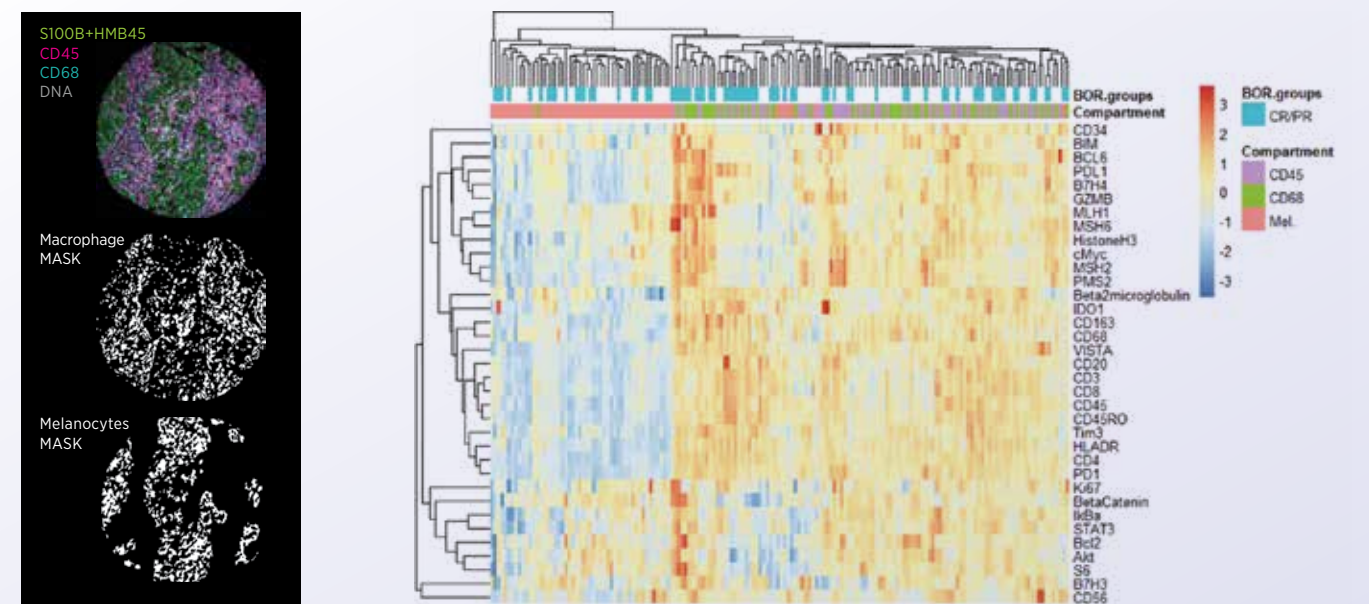
\*Panel concepts and offerings subject to change prior to commercial launch

## Case Study: Identification of predictive biomarkers for immune checkpoint in melanoma

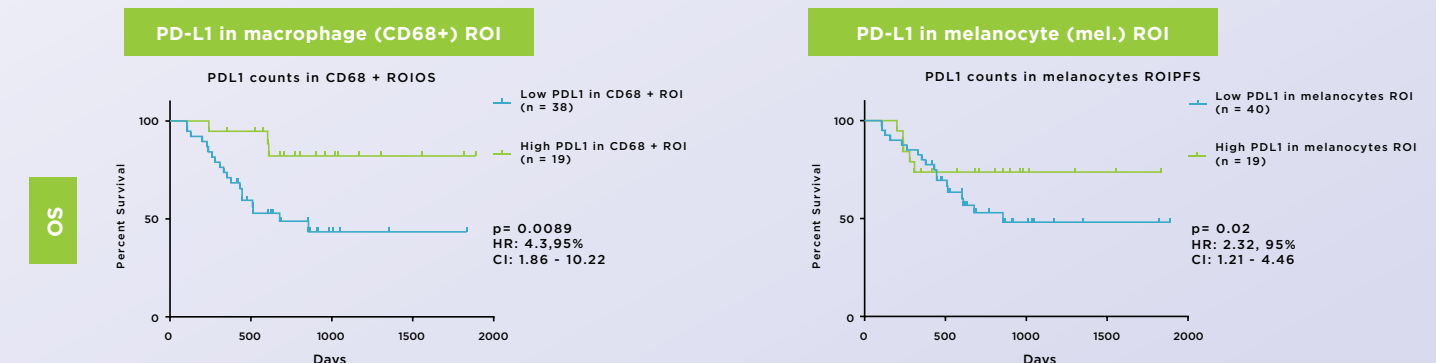
**Background:** Emerging immuno-therapeutic strategies require predictive biomarkers to select more patients with a positive clinical outcome and reduce toxicity

**Experimental design:** 44 protein targets spatially profiled across 3 unique compartments (macrophage, leukocytes, and melanocyte) from each melanoma biopsy obtained across 59 immunotherapy-treated patients using rare cell profiling

**Results:** 5 compartment-specific biomarkers discovered



### High PD-L1 expression in macrophages is associated with prolonged survival



Data courtesy of David Rimm, MD, PhD, Yale University



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