

GeoMx® RNA Panel for Immuno-Oncology

The GeoMx Immune Pathways panel is designed for comprehensive profiling of the tumor, tumor microenvironment, and tumor immune status. Profile up to 96 curated RNA targets with spatial resolution from a single tissue section using the GeoMx Digital Spatial Profiler (DSP).



Product Highlights

- Curated content designed for immuno-oncology research
- Includes tumor and tumor microenvironment coverage plus the Tumor Inflammation Signature (TIS)¹
- Pre-validated in multiplex format for use in human FFPE or fresh frozen tissue
- Customizable with up to 10 additional targets of interest
- For use with nCounter® readout and compatible with DSP Data Center Software

GeoMx RNA Assay Design

Designed to profile up to 96 targets simultaneously with spatial resolution. The Immune Pathways Core contains 84 targets plus controls designed for broad coverage of the tumor and tumor microenvironment. Up to 10 custom targets with¹ 2 additional controls can be added to select the content most relevant to your research. GeoMx RNA assays contain in situ hybridization (ISH) probes conjugated to unique DNA indexing-oligonucleotides via a UV-photocleavable linker. After region of interest (ROI) selection on GeoMx DSP and UV cleavage of the oligonucleotides, each DNA oligonucleotide is recognized by a unique Reporter probe that contains a fluorescent barcode. Reporter probes are imaged and counted by the nCounter Analysis System to provide a direct, digital readout of spatially resolved RNA expression.

Curated Content for Immuno-Oncology

The GeoMx Immune Pathways panel is designed to profile key aspects of the tumor and tumor microenvironment biology.

- Profile the global immune response
- Assess microenvironment immune activity
- Quantify tumor reactivity
- Measure the 18-gene Tumor Inflammation Signature known to be associated with response to PD-1/PD-L1 inhibitor pathway blockade

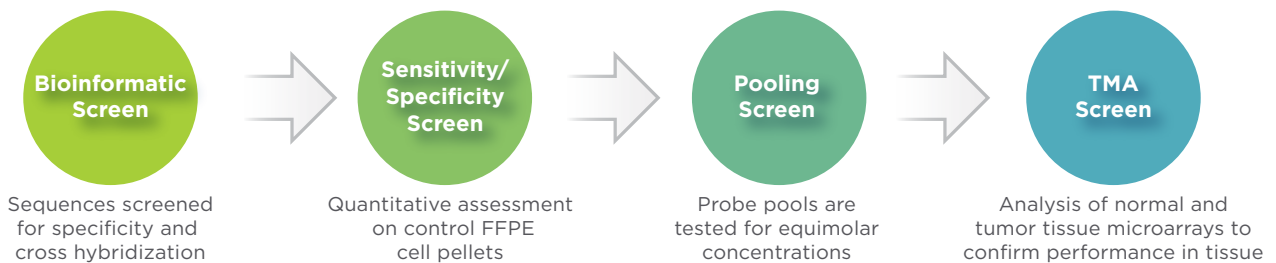
Accompanying Morphology Marker Kits are available for tissue visualization and ROI selection.

Curated Content for Immuno-Oncology

Core Panel Genes					Housekeeping Genes	
AKT1	CD47	FOXP3	IL6	PECAM1	OAZ1	SDHA
ARG1	CD68	GZMB	ITGAM	PSMB10	POLR2A	UBB
B2M	CD74	HAVCR2	ITGAV	PTEN	RAB7A	
BATF3	CD86	HIF1A	ITGAX	PTPRC	Negative Controls	
BCL2	CD8A	HLA-DQ	ITGB2	STAT1	Neg Probe 1	Neg Probe 4
CCL5	CMKLR1	HLA-DRB	ITGB8	STAT2	Neg Probe 2	Neg Probe 5
CCND1	CSF1R	HLA-E	KRT	STAT3	Neg Probe 3	Neg Probe 6
CD27	CTLA4	ICAM1	LAG3	TBX21	Custom RNA Probes	
CD274	CTNNB1	ICOSLG	LY6E	TIGIT	Custom 1	Custom 7
CD276	CXCL10	IDO1	MKI67	TNF	Custom 2	Custom 8
CD3E	CXCL9	IFNAR1	MS4A1	TNFRSF9	Custom 3	Custom 9
CD4	CXCR6	IFNG	NKG7	VEGFA	Custom 4	Custom 10
CD40	DKK2	IFNGR1	pan-melanocyte	VSIR	Custom 5	H3F3A
CD40LG	EPCAM	IL12B	PDCD1		Custom 6	Neg Custom
CD44	FAS	IL15	PDCD1LG2			

Validated Assays Ready for Use

All GeoMx RNA Assays undergo extensive validation to ensure high quality GeoMx DSP data.



Spatial RNA Profiling with High Reproducibility

RNA detection shows high reproducibility between slide sections (FIGURE 1).

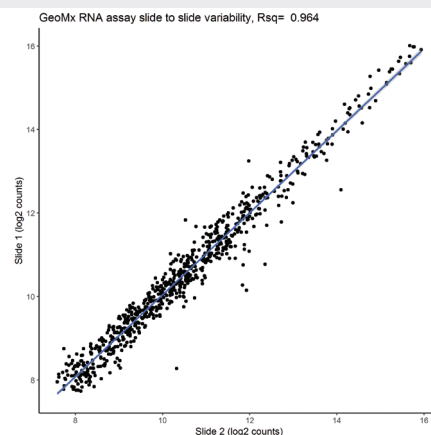


FIGURE 1: High reproducibility between separate slide sections.

Reveal Tissue Heterogeneity

Analysis of mixed tumor and tumor microenvironment ROI from colorectal cancer (CRC) show distinct RNA expression profiles in each segment respectively. (FIGURE 2)

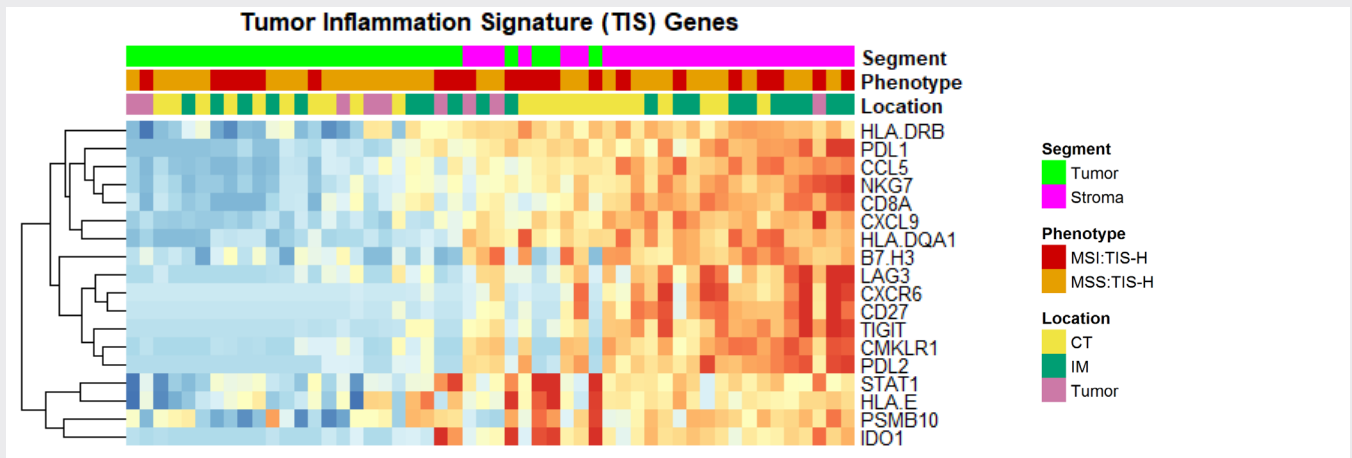
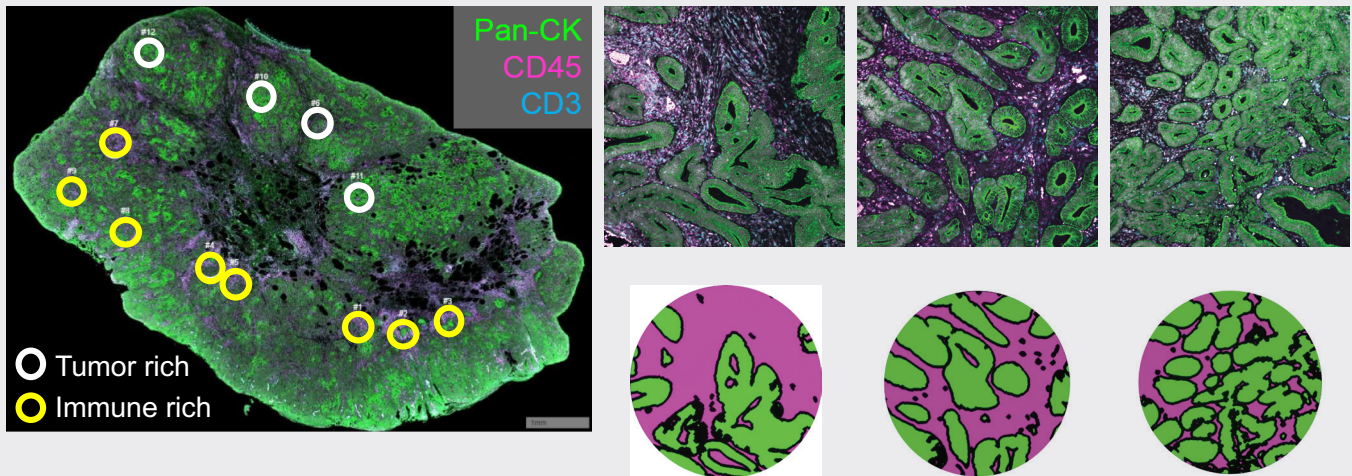


FIGURE 2: ROI were selected with mixed tumor and tumor microenvironment (immune) segments in CRC FFPE tissue with MSI tumors (all TIS-high), MSS-TIS-high, and MSS TIS-L. ROI were segmented based on PanCK/CD45 morphology stain. RNA expression shows strong clustering by compartment and tumor segments that cluster with the stroma have high levels of CD3 infiltrate.

GeoMx® Data Center

Unique GeoMx software uniquely combines whole tissue visualization at single cell resolution with advanced ROI selection to enable comprehensive spatial profiling of tissue sections. The fully integrated workflow tracks image data to corresponding profiling data, allowing users to easily go from data collection to data analysis and to interact with either dataset in real time.

The data analysis module assesses the quality of the raw data and provides a number of options to normalize data sets. Moreover, a variety of data visualization formats are enabled to export publication-quality figures. Visualization plots include: heatmap, cluster, bar graph, box plot, scatter plot, line/trend plot, strip plot, volcano plot, and PCA.

To view the RNA probe list visit: nanosttring.com/geomxassays

Ordering Information

GeoMx RNA Assays			
Product	Product Description	Quantity	Catalog Number
GeoMx Immune Pathways Panel <i>Human RNA Core for nCounter</i>	RNA panel including 84 targets plus controls for human immune pathways and TIS. Includes RNA probes.	12 slides	GMX-RNA-NCT-HIP-12
GeoMx Morphology Kits			
Product	Product Description	Quantity	Catalog Number
GeoMx Solid Tumor TME Morphology Kit <i>Human RNA Compatible</i>	Morphology kit for visualization of human solid tumors and the tumor microenvironment. For use with RNA assays. Includes fluorescent antibodies against Pan-CK, CD45, and a nuclear stain.	12 slides	GMX-RNA-MORPH-HST-12
GeoMx Melanoma TME Morphology Kit <i>Human RNA Compatible</i>	Morphology kit for visualization of human melanoma and the tumor microenvironment. For use with RNA assays. Includes fluorescent antibodies against S100B/Pmel17, CD45, and a nuclear stain.	12 slides	GMX-RNA-MORPH-HMEL-12
Additional Assay Reagents			
Product	Product Description	Quantity	Catalog Number
GeoMx RNA Slide Prep Kit for FFPE	Sample prep reagents for GeoMx DSP RNA analysis. Includes Buffer W, Buffer S, and Buffer R.	12 slides	GMX-PREP-RNA-FFPE-12
GeoMx Hyb Code Pack <i>RNA</i>	nCounter readout reagents for GeoMx DSP RNA analysis. Includes Hyb Code A-H, Probe ICP, and additional hybridization buffer.	96 AOI	GMX-RNA-HYB-96
GeoMx DSP Collection Plate	Barcoded collection plates for use on the GeoMx DSP. Required for AOI tracking. Kit includes 12 plates covering 1,152 AOI.	1 Pack	GMX-DSP-COLL-PLT
GeoMx DSP Instrument Buffer Kit	Buffer kit for the GeoMx DSP. Includes Buffer S and Buffer H. Sufficient for ~48 samples with ~18 AOI each. Volume requirements may vary based on experimental design.	1 Kit	GMX-DSP-BUFF-KIT
nCounter Master Kit (Max or FLEX Systems) Reagents and Cartridges	Reagents, cartridges, and consumables necessary for sample processing on nCounter MAX and FLEX Systems	96 AOI	NAA-AKIT-012
nCounter SPRINT Cartridge	Sample Cartridge for nCounter SPRINT System	96 AOI	SPRINT-CAR-1.0
nCounter SPRINT Reagent Pack	nCounter SPRINT Reagent Pack containing Reagents A, B, C, and Hybridization Buffer	1,536 AOI	SPRINT-REAG-KIT

References

1. Ayers, Mark, et al. IFN- γ -related mRNA profile predicts clinical response to PD-1 blockade. *Journal of Clinical Investigation*. 127.8 (2017).

See more at nanosttring.com/GeoMxPubs



For more information, please visit nanosttring.com/GeoMxDSP

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