

# NANOSTRING GEOMX: DIGITAL SPATIAL PROFILING OF RNA OR PROTEIN TARGETS ON A SINGLE TISSUE SECTION

Gain deeper understanding of the tumor microenvironment with multiplex gene expression and protein analysis from distinct regions of interest of a whole slide section.

Highly multiplexed RNA or protein detection - up to 800 targets in a single position

- RNA or protein analysis from a single FFPE section
- **Morphological context:** whole slide 4 color imaging to guide profiling and ROI selection
- **Maintains sample integrity:** samples can be reused
- **Digital quantification:** up to 6 logs (base 10) dynamic range
- **High resolution:** from 600 micron regions of interest down to single-cell analysis
- **High throughput:** up to 20 samples per day

## SIMPLE AND RAPID WORKFLOW

DSP technology builds upon the highly robust nCounter digital barcoding technology from Nanostring.

- Accurate
- Reproducible
- Reliable

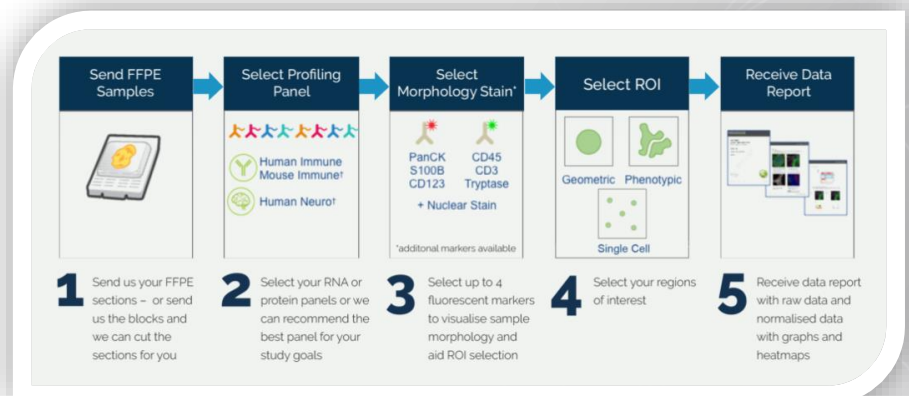
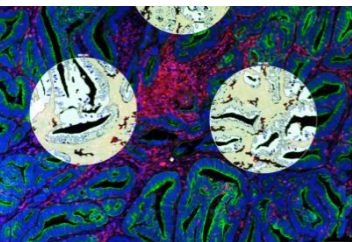


Fig 1: Nanostring DSP workflow



# HOW DSP TECHNOLOGY WORKS

## Data Quality Control

The use of 6 positive and negative control probes ensure hybridization efficiency, prep station purification and imaging are at optimum levels. Assay variation is controlled and monitored using control targets built into the CodeSet reagents.

High reproducibility and correlation of Positive Control Counts vs. protein tag set concentration. Nanostring assays provide a correlation of positive control counts to Protein tag target concentration with  $R^2 > 0.95$ .

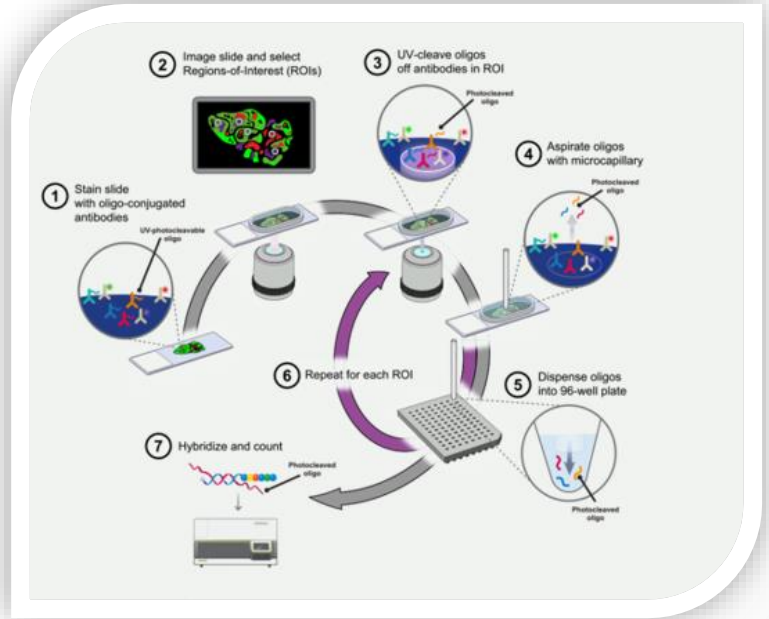


Fig 2: Working of DSP technology

# DATA OUTPUT

Each region of interest is analyzed on the nCounter platform providing each counts for each individual analyte. Once all regions of interest have been analyzed, raw data can be provided in an excel document along with normalized data in graphical form including heatmaps to provide increased data insights.

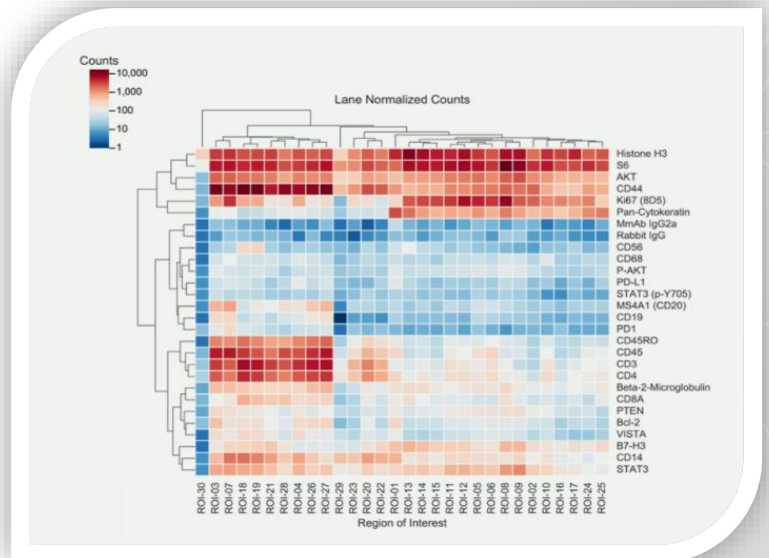


Fig 3: Heatmap showing differential protein expression within different ROIs

## CURATED CONTENT FOR IMMUNO-ONCOLOGY

Discover the list of gene and protein panels included in the ImaLink platform

| Immune Cell Profiling Panel<br>Human Protein Core      |          |  |                   |  |       | IO Drug Target Panel<br>Human Protein Module |       |
|--|----------|--|-------------------|--|-------|--|-------|
| Beta-2-microglobulin                                   | CD3      | CD56                                     | CTLA4             | GZMB   | PD-1  | 4-1BB  | LAG3  |
| CD11c  | CD4      | CD68                                     | Pan-cytokeratin   | HLA-DR   | PD-L1 | ARG1   | OX40L |
| CD20   | CD45     | CD8                                      | Fibronectin       | Ki-67  | SMA   | B7-H3  | STING |
| Ms IgG2a   |          |  | Histone H3        |  |       | GITR   | TIM-3 |
| Ms IgG1  |          |  | S6                |  |       | IDO1   | VISTA |
| Rb IgG   |          |  | GAPDH             |  |       |  |       |
| Immune Activation Status Panel<br>Human Protein Module |          | Cell Death Panel<br>Human Protein Module |                   | PI3K/AKT Signaling Panel<br>Human Protein Module |       |  |       |
| CD127  | CD80     | BAD                                      | GZMA              | Pan-AKT  |       | Phospho-GSK3A (S21)/Phospho-GSK3B (S9)       |       |
| CD25   | ICOS     | BCL6                                     | p53               | MET  |       | INPP4B                                       |       |
| CD27   | PD-L2    | BCLXL                                    | PARP              | Phospho-AKT1 (S473)                              |       | PLCG1  |       |
| CD40   |          | BIM                                      | Cleaved Caspase 9 | Phospho-GSK3B (S9)                               |       | Phospho-PRAS40 (T246)                        |       |
| CD44   |          | CD95/Fas                                 |                   | Phospho-Tuberin (T1462)                          |       |  |       |
| Immune Cell Typing Panel<br>Human Protein Module       |          | Pan-Tumor Panel<br>Human Protein Module  |                   | MAPK Signaling Panel<br>Human Protein Module     |       |  |       |
| CD14   | FAPalpha | BCL-2                                    | NY-ESO-1          | EGFR   |       | Phospho-MEK1 (S217/S221)                     |       |
| CD163  | FOXP3    | EpCAM                                    | PR                | pan-RAS  |       | Phospho-p38 MAPK (T180/Y182)                 |       |
| CD34   |          | ER alpha                                 | PTEN              | BRAF   |       | Phospho-p44/42 MAPK ERK1/2 (T202/Y204)       |       |
| CD45RO   |          | HER2/ERBB2                               | S100B             | Phospho-c-RAF (S338)                             |       | p44/42 MAPK ERK1/2                           |       |
| CD66b  |          | MART1                                    |                   | Phospho-JNK (T183/Y185)                          |       | Phospho-p90 RSK (T359/S363)                  |       |

| 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       |         |                    |             |

For more information visit our website [www.imabiotech.com](http://www.imabiotech.com)

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