

About CosMx:

- Subcellular resolution (<100nm) for 1000-plex on FFPE slide
- Multiplexing capability (Up to 1000-plex panel RNA and Up to 100-plex Protein)
- Compatible with FFPE, Fresh Frozen, organoids, cultured cells
- High Sensitivity and Dynamic Range
- Capable of Multi-Modal cell Segmentation for true Single-Cell Segmentation

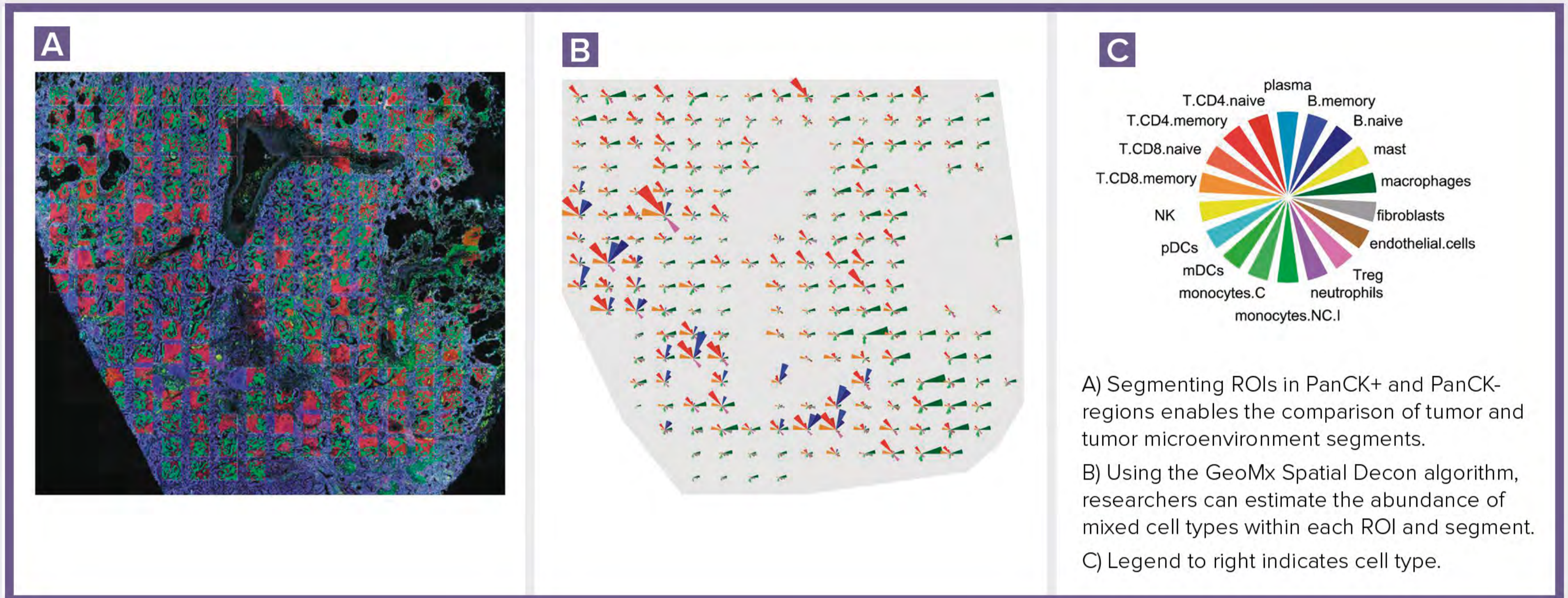


Why LifeStrands Genomics?

- Only company in the region to be a certified service provider for CosMx
- Be the first to use CosMx for your research
- One-stop solution to all your spatial needs
- Publication ready data
- Minimum hands-on time required from you



WHAT IS SPATIAL GENOMICS?

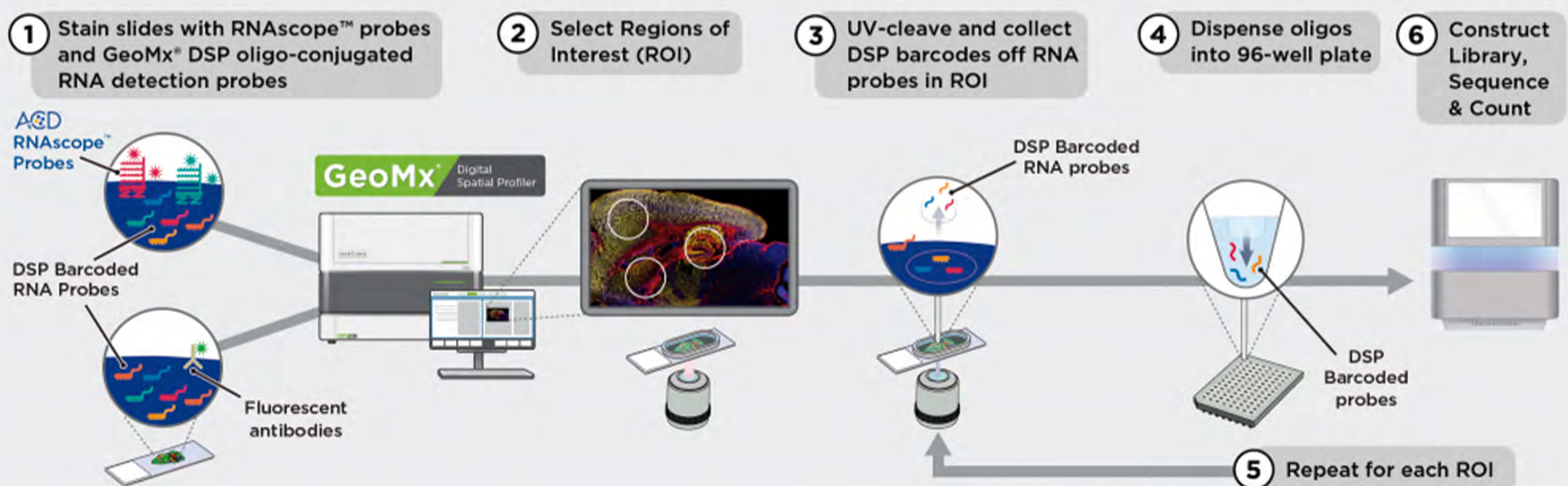


Spatial Genomics is defined as the study of tissues within their own 2D or 3D context and is the new frontier of molecular biology.

Same way that GPS captures location coordinates within an area to create a map and track you within it, the same principle can be translated to a cellular and molecular level. Through this technology, we can help map the spatial architecture of a cell and enable you to see things that are not possible by sequencing or any other technologies out

How Spatial Genomics works?

- Sample is first hybridized with probes that has unique DNA indexing-oligonucleotides via a UV photocleavable linker (1).
- Researchers select regions of interest (ROIs) on the GeoMx DSP based on morphological staining (immunofluorescence or RNAscope) and the DSP barcodes are UV cleaved and collected (2-5).
- Sequencing library is constructed with DSP barcodes and ROI specific indexes (6).
- Sequencing results are imported back into the GeoMx software for integration with the slide images.



WORKFLOW OF OUR SERVICES:

Kick Off meeting

- Prepare target
- Discuss feasibility of the project
- Prepare charged slide for the experiment

Preliminary Service

- H&E staining
- Mock Immunofluorescence staining (IF)
- DV200 (checking for RNA quality of sample)
- Mock ROI selection (to visualise cell count)

Actual Spatial Run

- Slides would be hybridized with probes and stained with morphological markers from the conditions of the mock IF run. Using ROI selected library preparation is done and results are sequenced

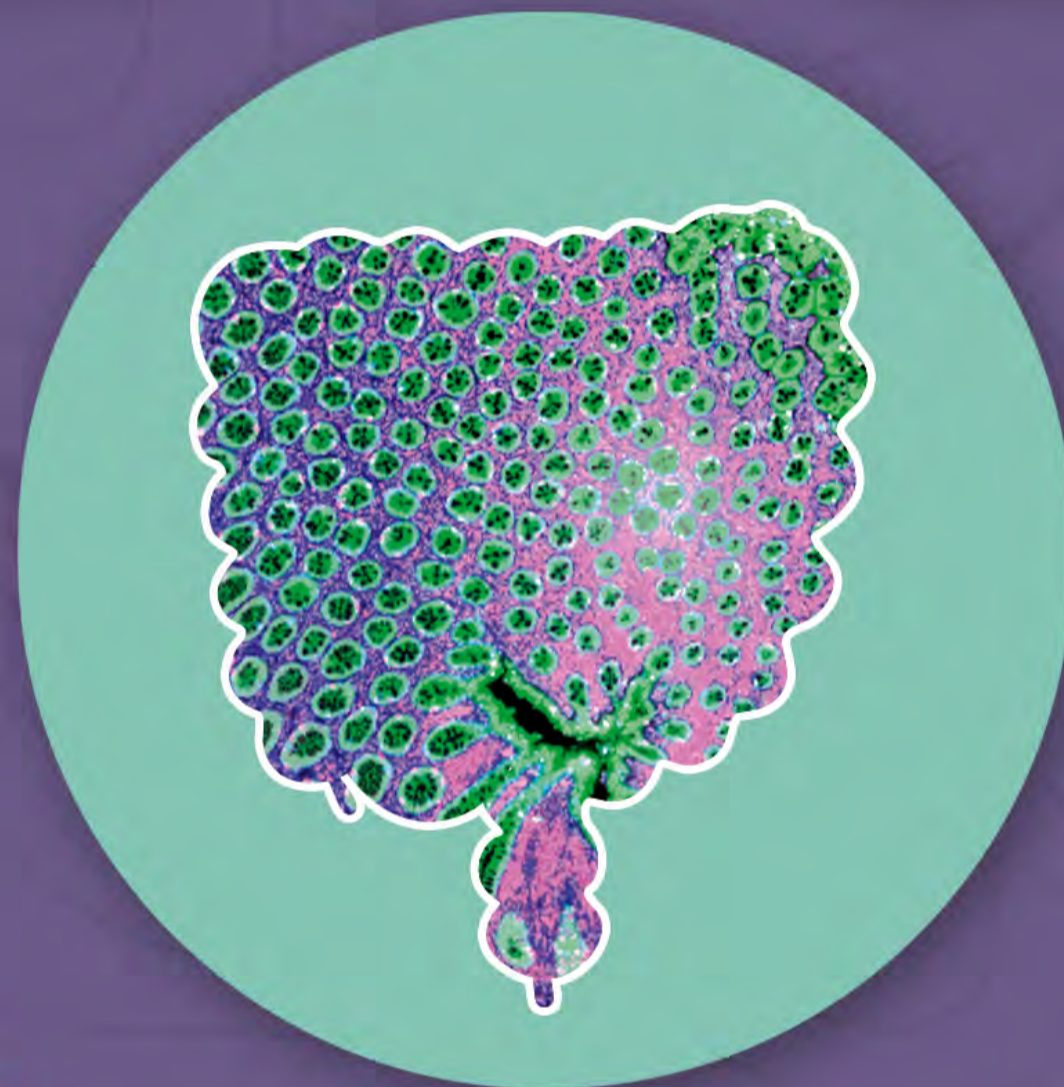
Analysis

- DSP suite (volcano plot, pathway analysis, heatmap)
- Cell deconvolution (differentiate cell types)
- Customise script according to tissue type

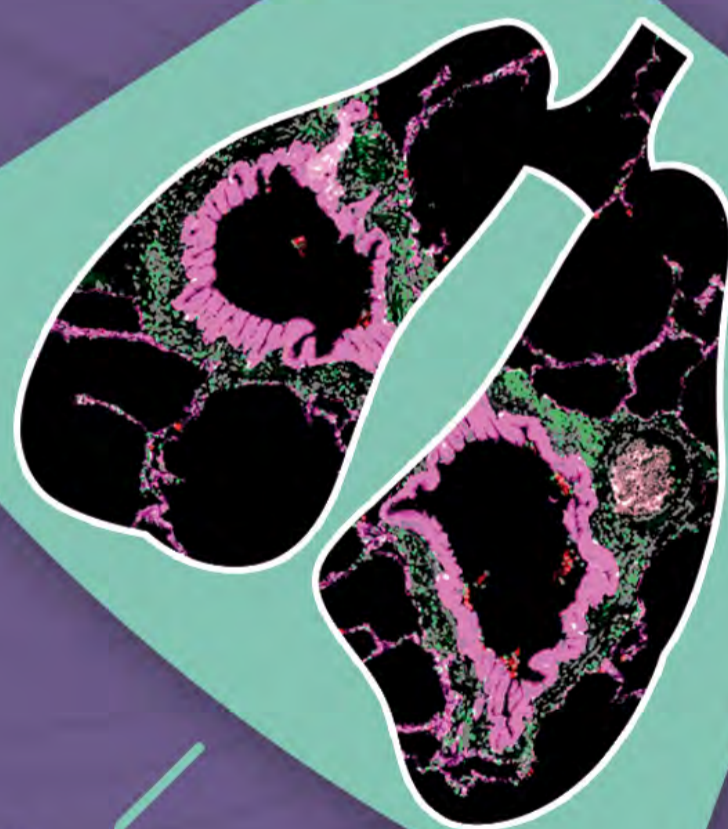
Validation

- Using Single cell confirmation by RNAscope ISH

COLON TISSUE



STAINED WITH:
SYTO13
PANCK
CD45
VIMENTIN



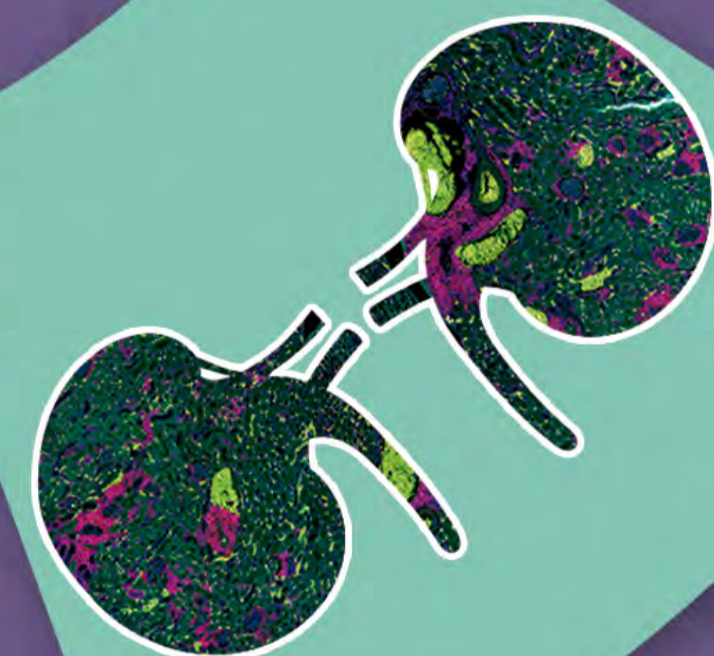
STAINED WITH:
SYTO13
PANCK
CD45
CD3

LUNG TISSUE



LIVER TISSUE

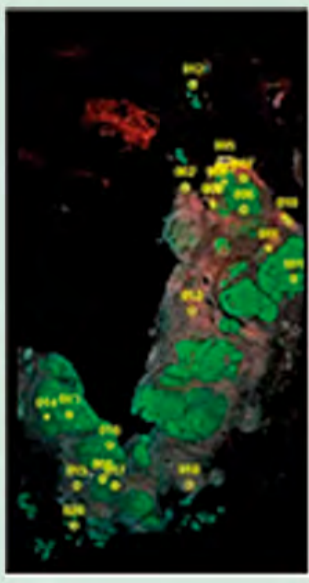
STAINED WITH:
SYTO13
PANCK
CD45
VIMENTIN



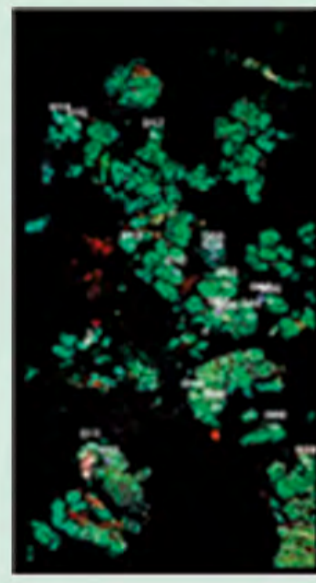
MOUSE KIDNEY TISSUE

STAINED WITH:
SYTO13
PANCK
CD45

Case study: Analysing Spatial Transcriptome of the tumor and microenvironment in – ER/PR/c-ErbB2 strong vs ER/PR/c-ErbB2 negative/scarce



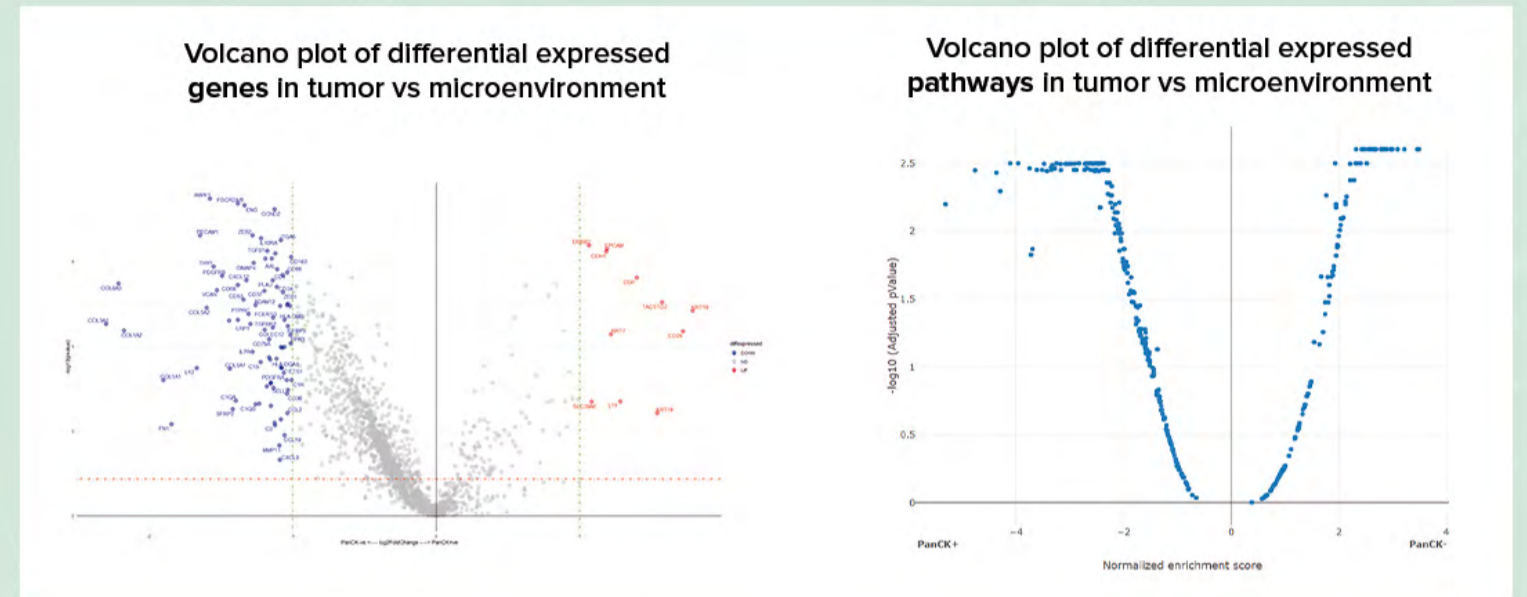
2441 Human Breast Cancer, DSP
Microscope scanned image. Stained with PanCK (green), CD45 (red) and SYTO13 (cyan)



2689 Human Breast Cancer, DSP
Microscope scanned image. Stained with PanCK (green), CD45 (red) and SYTO13 (cyan)

20 and 19 ROIs were chosen in 2 FFPE samples 2441 & 2689, respectively. CTA analysis were focused on the following variables – Tumour vs Microenvironment; Tumour infiltrating lymphocyte quantity – Hot vs Cold; ER/PR/HER2 status; and normal-tumour front

Volcano Plot to analyse and visualise:

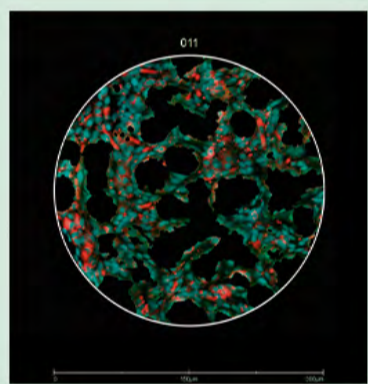
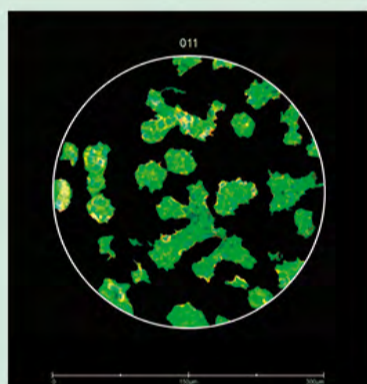
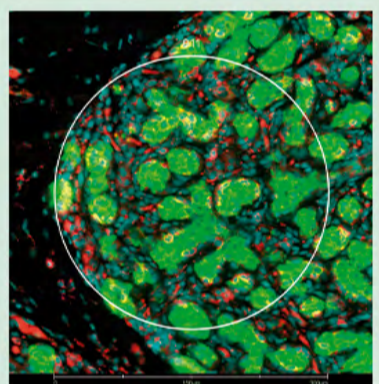
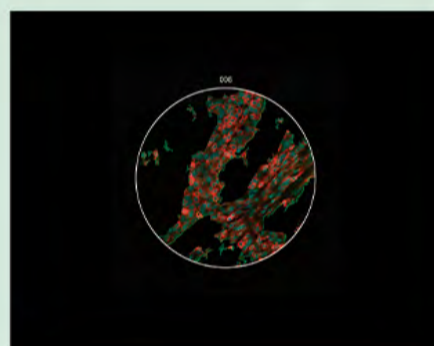
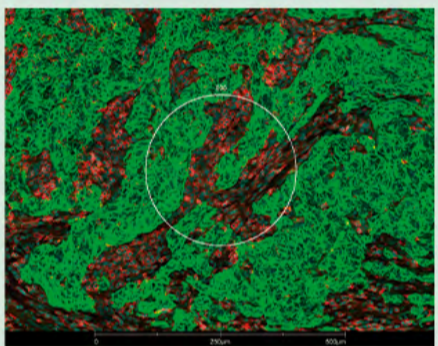


ROI selection:

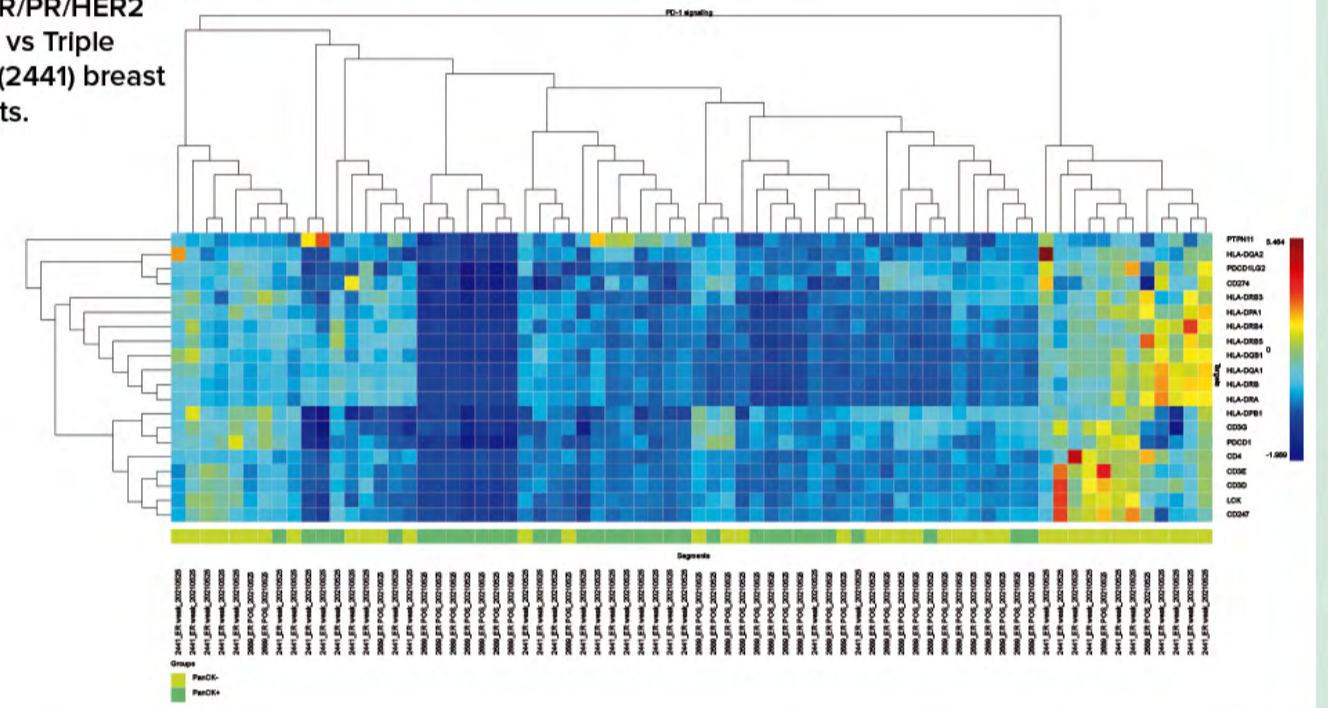
ALL

CK+

CK-



De-convolution of Immune cell types shows differential immune response in ER/PR/HER2 strong (2689) vs Triple NEG (scarce) (2441) breast cancer patients.



OUR SERVICE FEATURES:

- ▶ Consultation on experimental design, logistics and project navigation.
- ▶ Experienced in-house pathologists to guide selection of morphological regions of interest.
- ▶ FFPE RNA quality assessment upon request.
- ▶ Regular progress update at your finger-tips.
- ▶ Live-chat technical and application support.
- ▶ Antibodies customised according to project type
- ▶ Extensive in-house antibody catalogue
In house Bioinformation
- ▶ Pre-publication support
- ▶ Pre-grant support

Where to find us:

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2441

2689