



# Standard BioTools Discovery Lab

Standard BioTools Canada Inc., Markham, ON

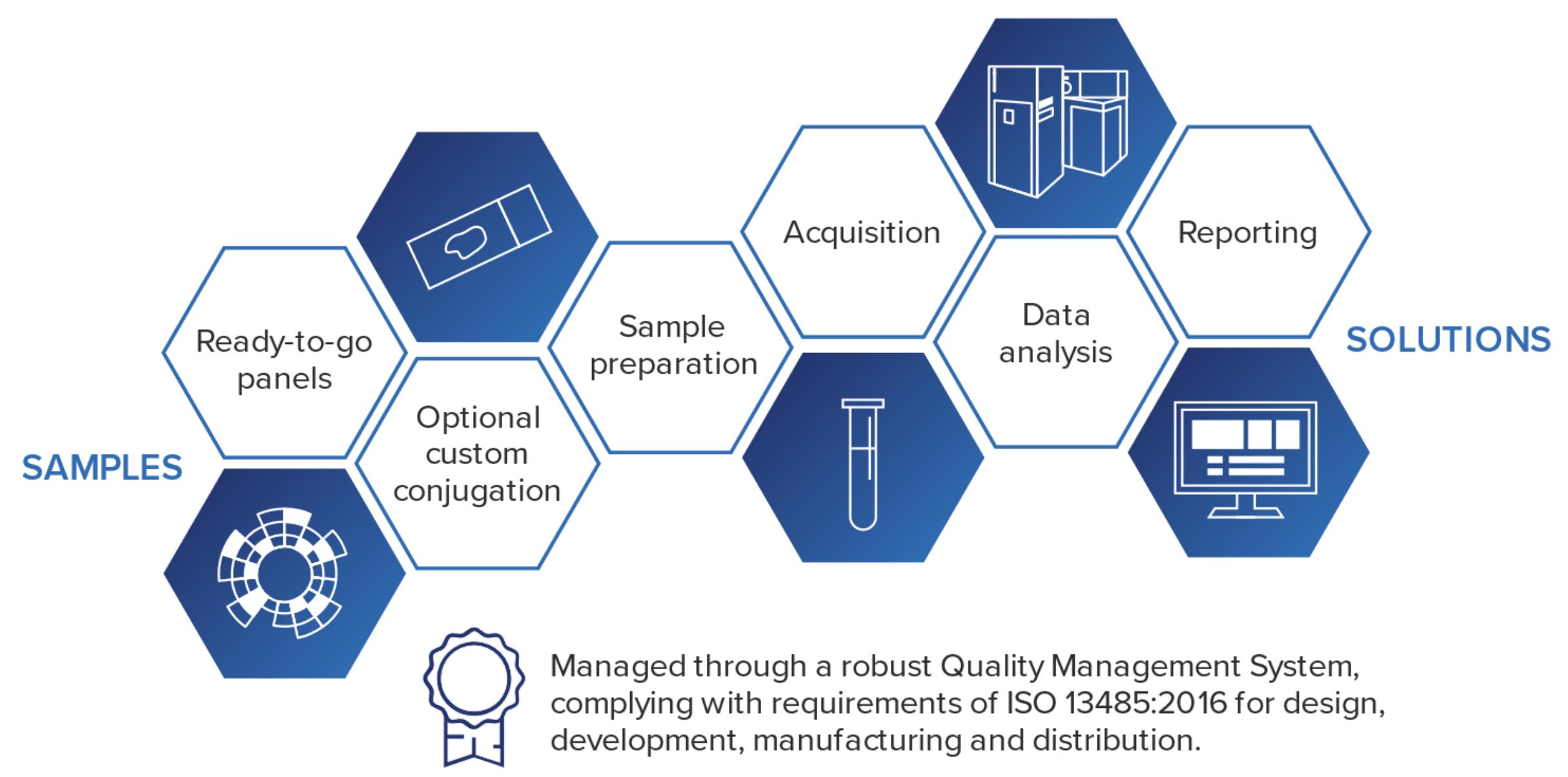
FLOW &  
IMAGING

## Introducing Standard BioTools Discovery Lab

Get started today on anything from a pilot study to a large-scale project. Our expert consultants will guide you toward developing the best plan for your precious samples.

Our team offers flow and imaging CyTOF® cytometry services to help you discover high-plex data from your samples.

Explore our comprehensive menu of standard and custom services aligned to your project goals, budget and timelines. Our global labs are available for instrument demonstrations, service projects and much more.



## Why choose a service project?

- 1** Try our service before you buy. Demonstrations are available in our state-of-the-art facilities.
- 2** Standard BioTools™ Discovery Lab has easy access to the latest instrumentation, software and reagents compliance-validated with ISO 13485.
- 3** Ready-to-go, standardized panels are available for both human and mouse samples.
- 4** Additional samples can be stained, stored for extended periods and easily shipped.
- 5** We provide end-to-end solutions, including data analysis with multiple software options.
- 6** Internal standard controls are included for data normalization over long collection periods.
- 7** We provide direct communication of planning, methods and data analysis to meet every need.
- 8** Our Discovery Lab has contributed to more than 150 projects since 2019.

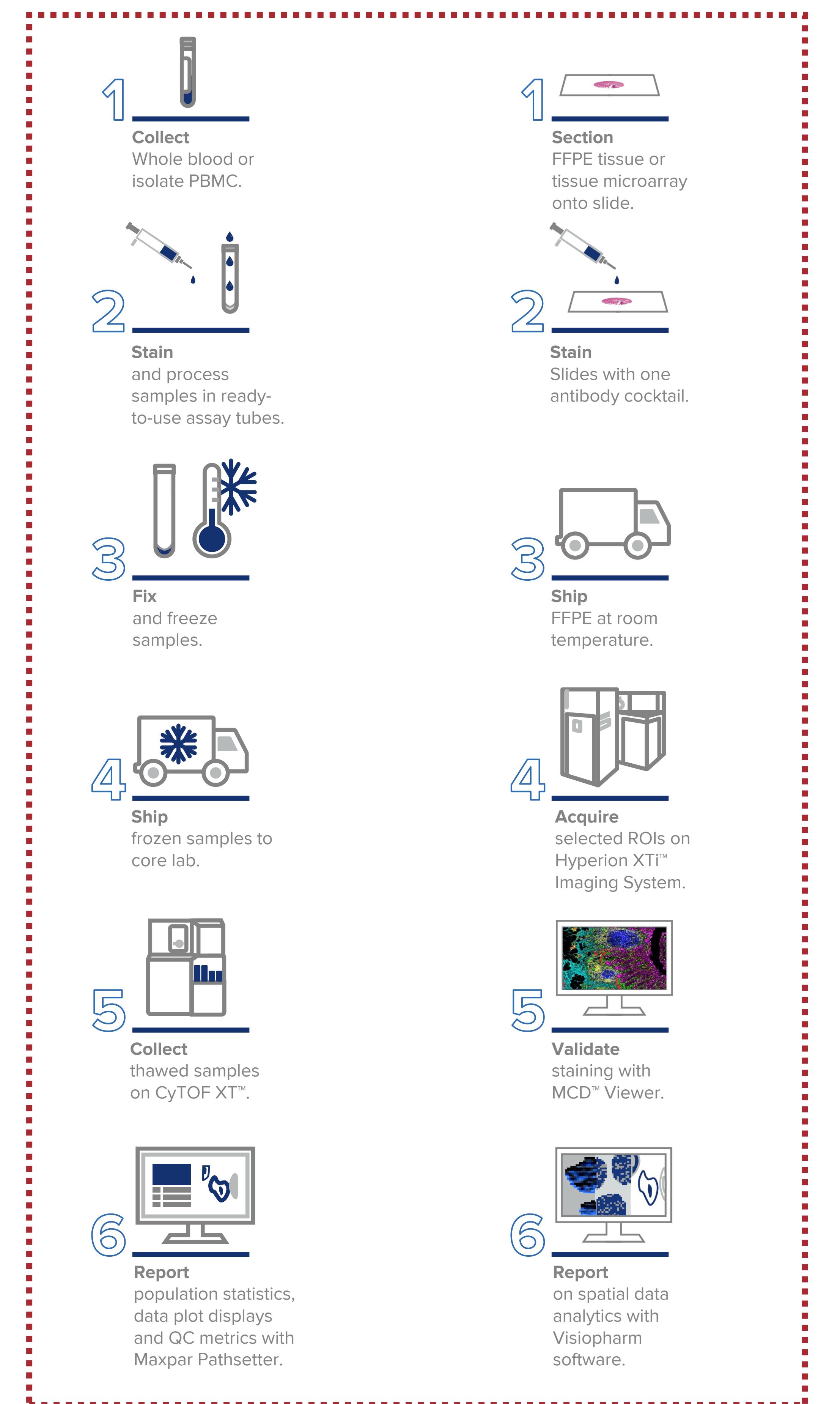
Flexible storage of tissue and cell suspension samples puts data acquisition on your schedule

## Powered by CyTOF

- Trusted CyTOF technology has been used in over 2,000 peer-reviewed publications.
- 50-plus metal-conjugated tags available.
- The use of metal labels overcomes key fluorescence limitations that impact data quality.
- Applications of CyTOF technology include immune profiling, biomarker discovery, assay development, target validation, drug efficacy, drug delivery, metabolism and safety.
- For high-plex flow cytometry, up to 20 fixed cell samples can be barcoded to simplify multi-site research.



## Simply stain and ship – get results within weeks



## Explore our newly offered services

### Hyperion XTi Imaging System

The Hyperion XTi™ is a next-generation imaging system that offers the most reliable and fastest workflow to generate high-plex imaging data. Investigate tissue microenvironments with an unmatched limit of detection that is not impacted by tissue autofluorescence or spectral overlap.

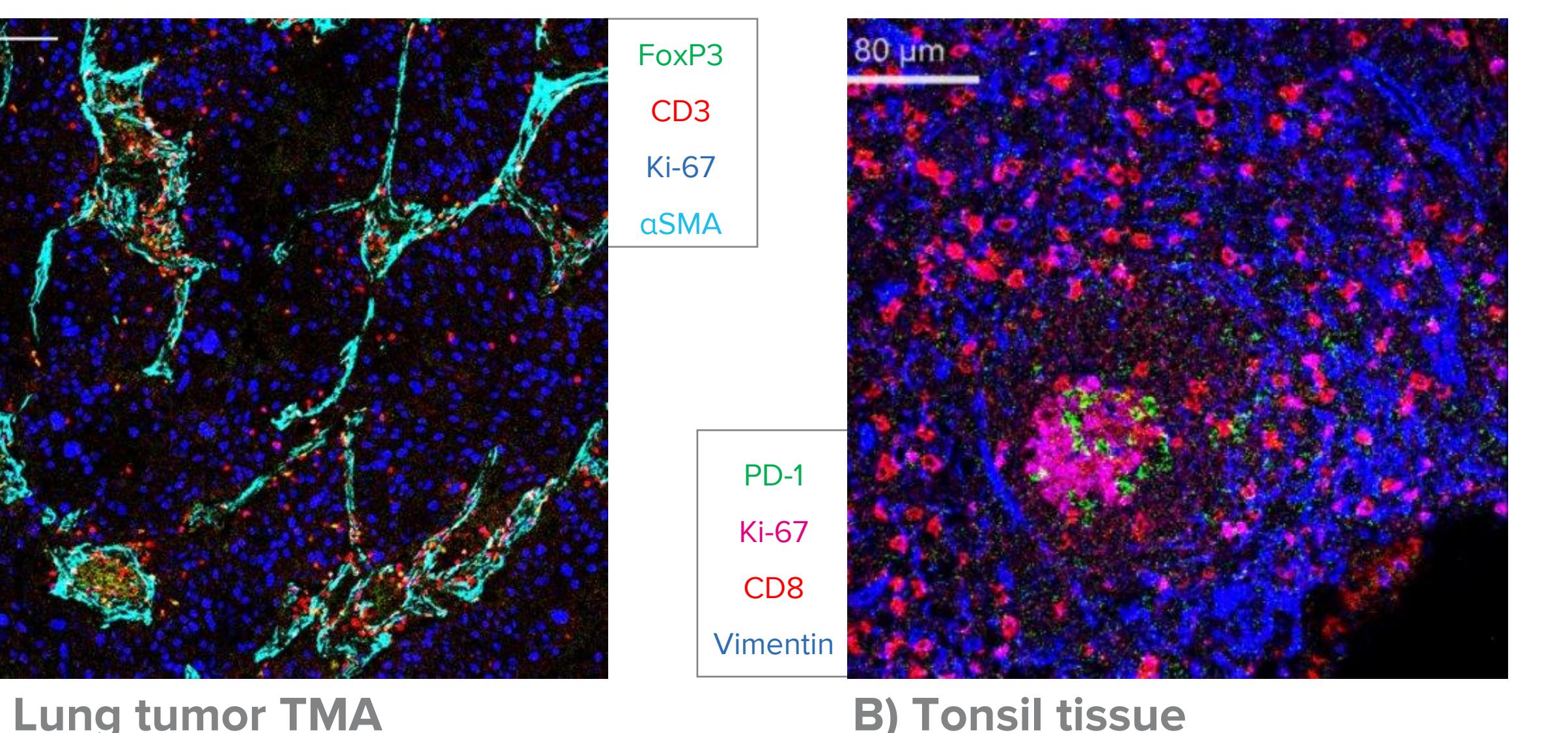


Figure 1. Images generated at 800 Hz using the Hyperion™ XTi. Human tissue samples were used. A) Localization of the regulatory T cell in the tumor microenvironment tissue microarray (TMA). B) Illustration of a tonsil germinal center

### Neuronal Markers for Human and Mouse

Neuro phenotyping panel for imaging consists of 7 cross-reactive markers to identify the cellular composition of human and mouse neuronal tissue.

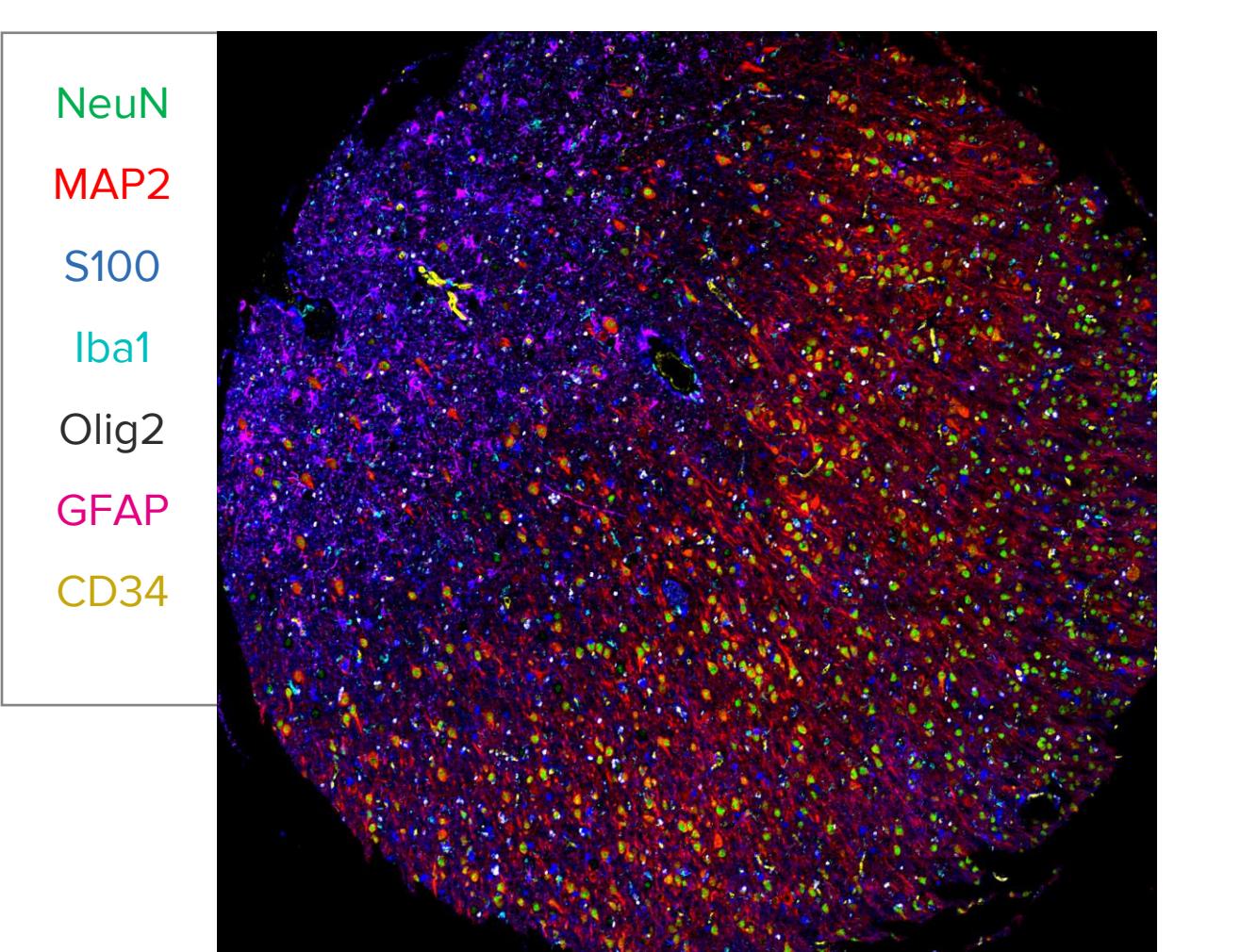


Figure 2. Application of high-parameter neuro-oncology Imaging Mass Cytometry™ (IMC™) panel in various human brain tumor tissues. A 40-parameter antibody panel designed to highlight tissue architecture, tumor and immune cell phenotype and activation states was applied on the occipital lobe. Region of interest (ROI) = 1,600  $\mu\text{m}^2$

### Simultaneous Protein and RNA Detection

Incorporate up to 12 metal-conjugated RNAscope™ probes seamlessly into your IMC panels to visualize both the transcriptomic and proteomic profiles found in the same formalin-fixed, paraffin-embedded (FFPE) sample. This integrated approach creates new opportunities with IMC to study biological processes with difficult protein targeting.

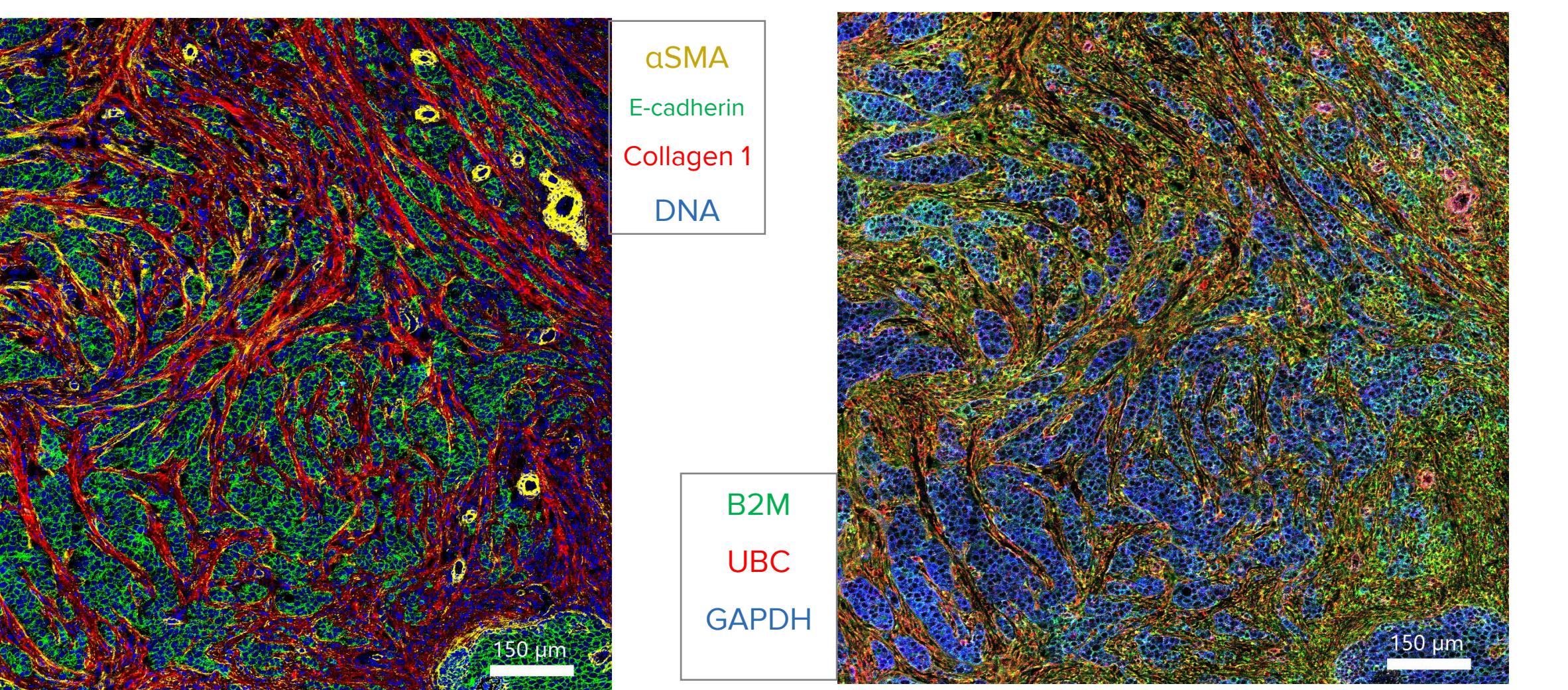


Figure 3. Co-detection of protein and RNA expression in a single human breast cancer sample using the Hyperion XTi. 33-parameter panel with 12 RNA detection probes included

### Cell Segmentation for Immunophenotyping

The Maxpar® IMC Cell Segmentation Kit (ICSK) enables single-cell analysis from the abundance of data that comes with high-plex imaging. Cellular borders are accurately and reliably detected across multiple tissue types without compromising current channels in your panel.

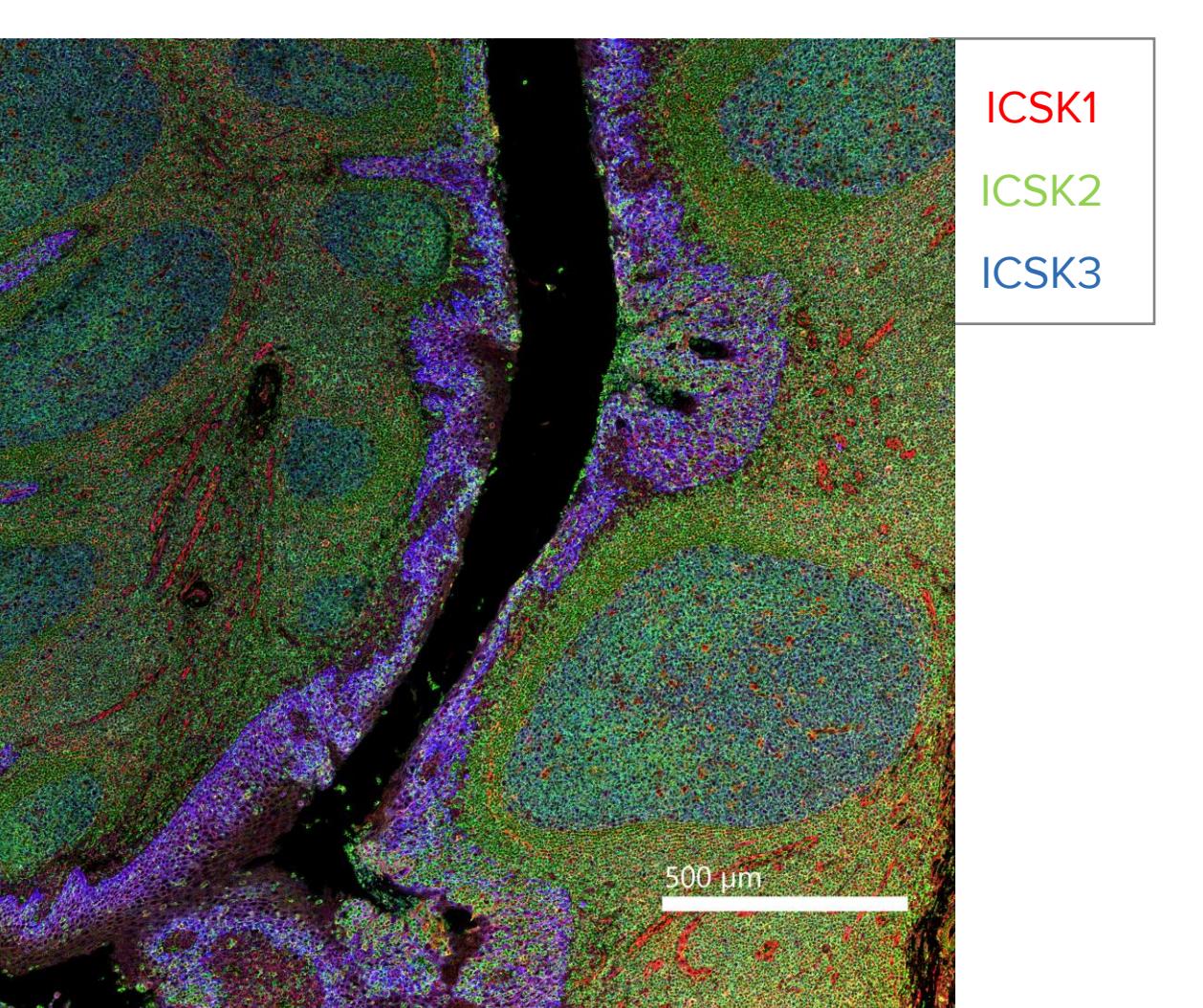


Figure 4. Single-cell analysis results of a human tonsil tissue sample using the Maxpar IMC Cell Segmentation Kit on the Hyperion XTi. The plasma membrane is illustrated using the following markers: ICSK1 (red), ICSK2 (green), ICSK3 (blue). Multiple antibodies are used to provide complete coverage of cell membrane detection across the tissue.

### Single-Cell Data Analysis With Phenoplex Software

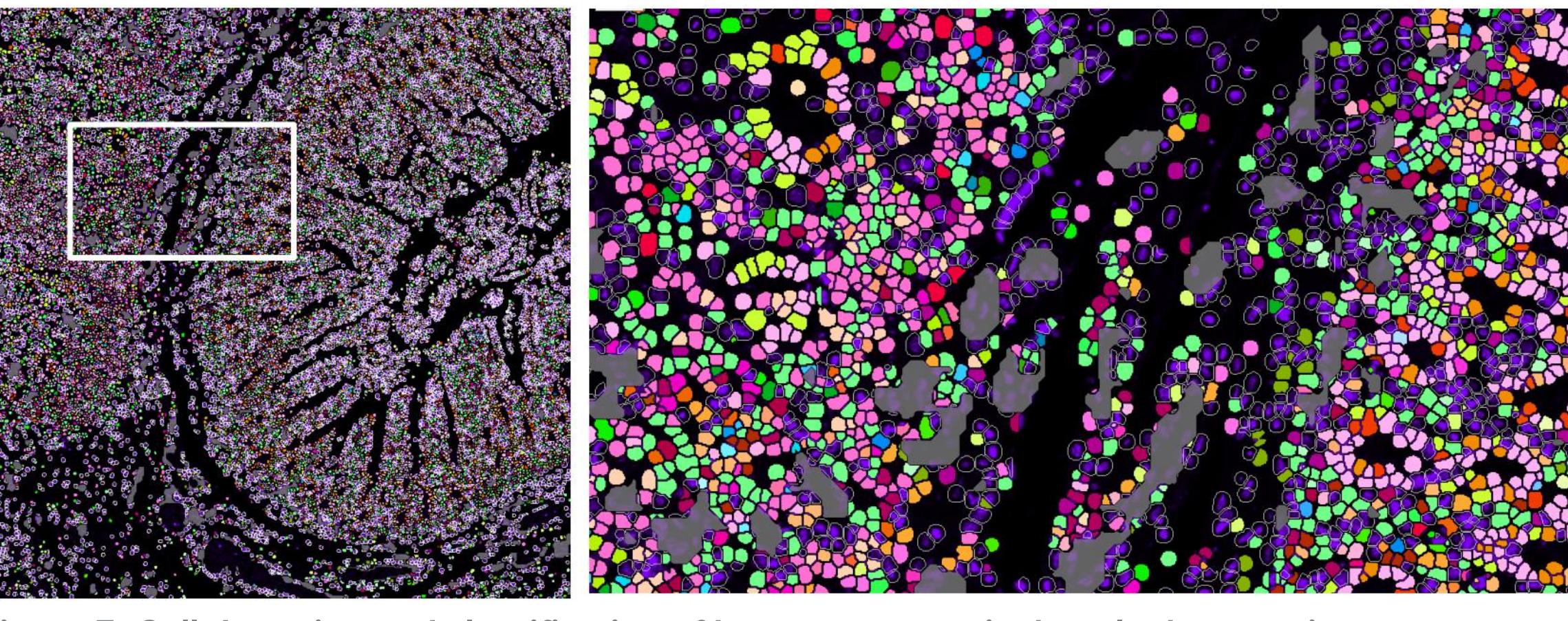


Figure 5. Cell detection and classification of human pancreatic ductal adenocarcinoma tumor using the Visiopharm® Phenoplex™ software. An ROI of 2 mm x 2 mm was acquired. The tissue was stained with a panel containing 35 phenotypic markers (pan-cytokeratin, E-cadherin, Ki-67, CD45, CD3, CD4, CD8, CD68, CD163, CD11b, INOS, pERK, CDK4, PD-1, PD-L1, LAG3, CD14 and CD66b).

### Maxpar Pathsetter Method Customization

Maxpar Pathsetter™ is an automated cell-type identification and data analysis solution through high-parameter probability state modeling. The software is compatible with several of our Maxpar panel kits that simplify profiling. Custom Method development is offered for additional markers and expansion panels as a service.

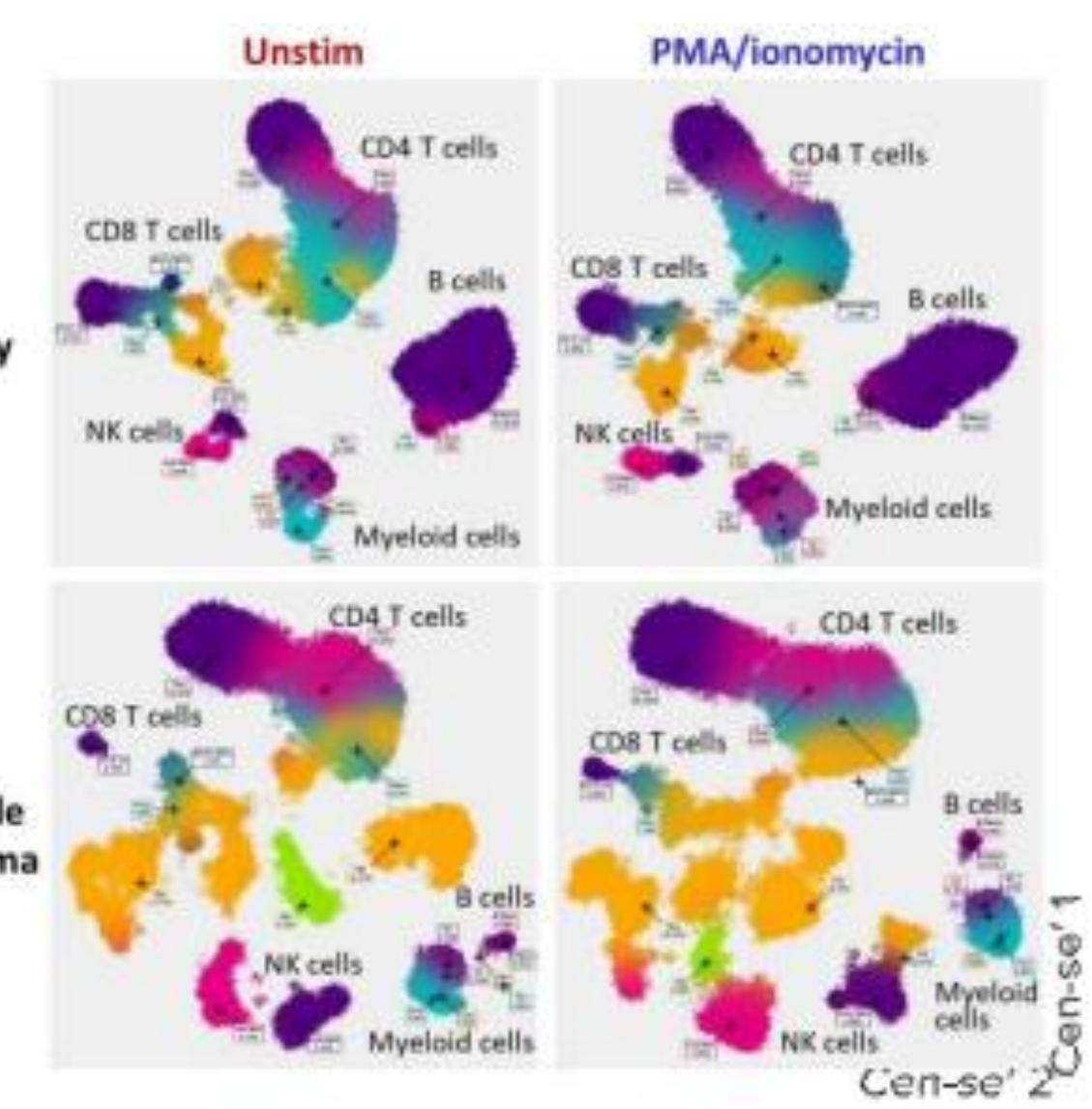


Figure 6. Pathsetter analysis of 37 immune populations from human peripheral blood mononuclear cells (PBMC) stained with the Maxpar Direct Immune Profiling Assay. A) A Cen-se™ plot illustrating the frequencies and distribution of immune cell population in healthy donor and multiple myeloma samples. Pathsetter identified 3 populations that significantly differ in cell frequency ( $\gamma\delta$  T cells, B cells and NK cells) compared with healthy donor.