STANDARD BIOTOOLS™

Hyperion™

Hyperion XTi Imaging System

Unlocking **new views** in spatial biology

Discover the power of Imaging Mass Cytometry™

Image any tissue type

with no autofluorescence interference

Three acquisition modes

to accommodate any type of research

Co-detection

of protein and RNA on the same tissues

Batch staining

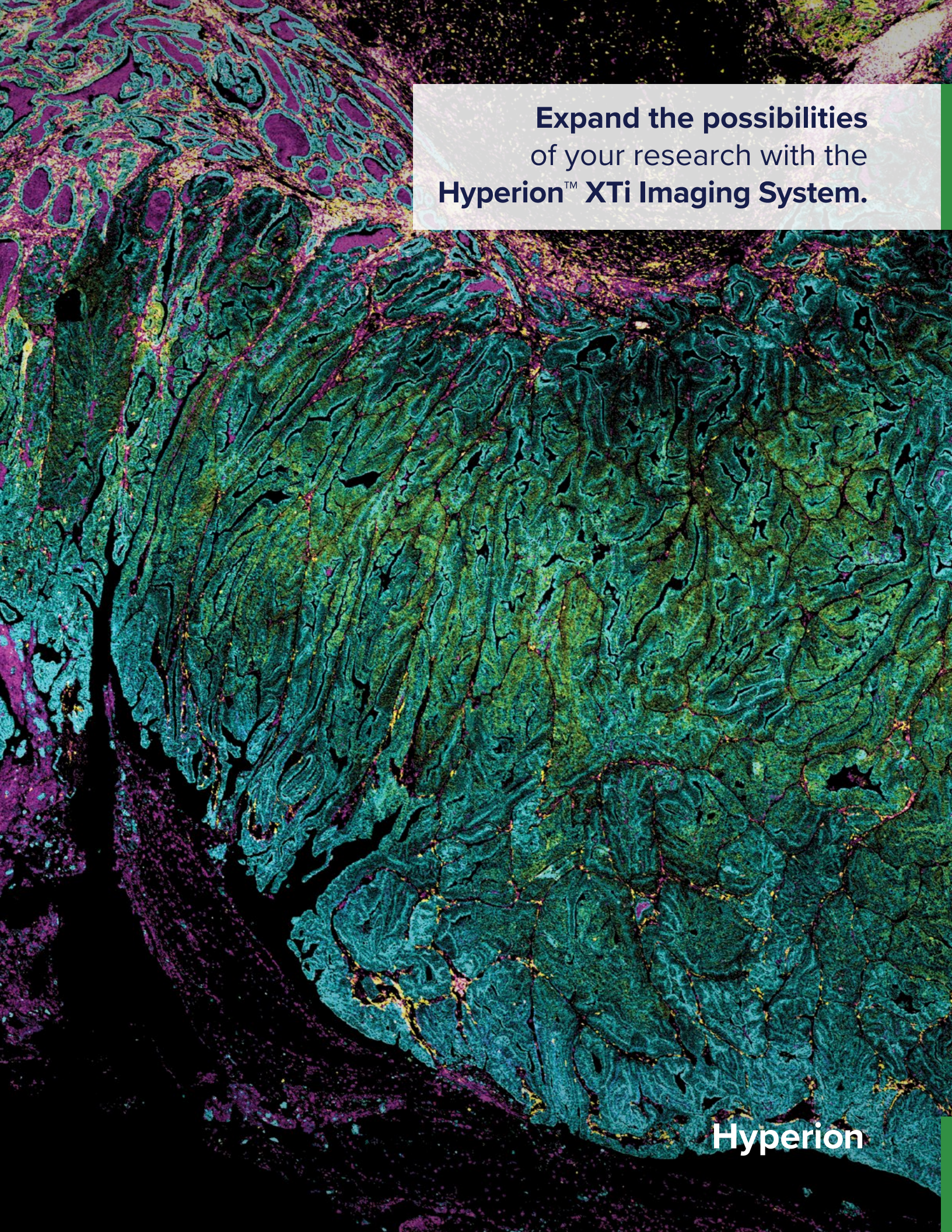
workflow for high-volume studies

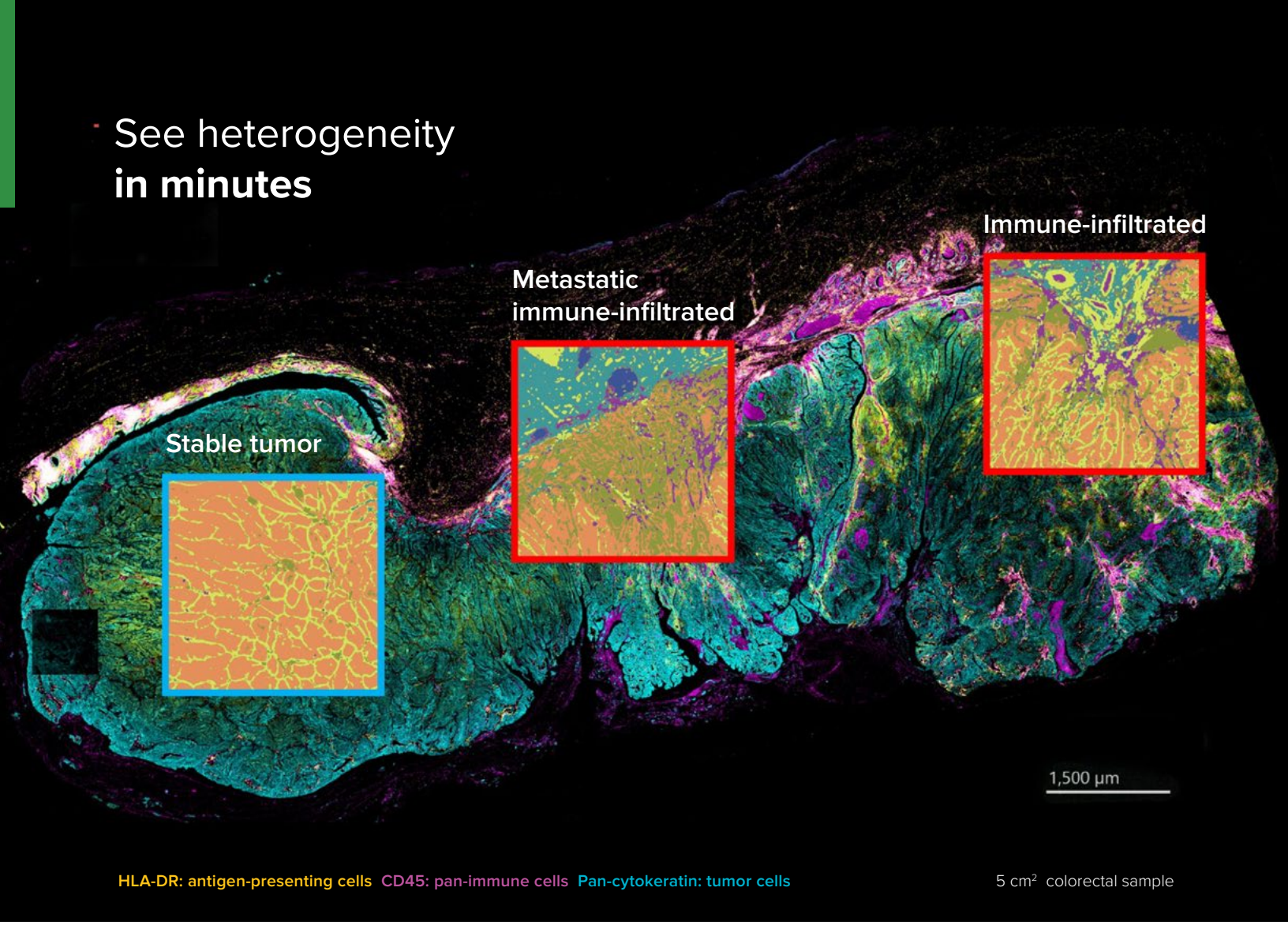
Automated slide loading

for walk-away acquisition

Multimodal capabilities

with imaging and flow cytometry analysis

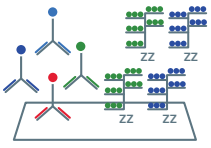

Expand the possibilities
of your research with the
Hyperion™ XTi Imaging System.
Hyperion



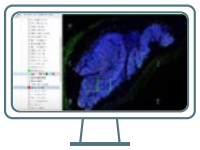
Visualize 40-plus markers in **real time**

Understanding the complex tissue microenvironment is essential to the timely evaluation of disease progression and the response to therapeutics. Imaging Mass Cytometry (IMC™) technology uniquely enables 40-plus protein and RNA markers to be **simultaneously acquired and visualized**, without time-consuming acquisition cycles.

A one-step multiplexed imaging approach

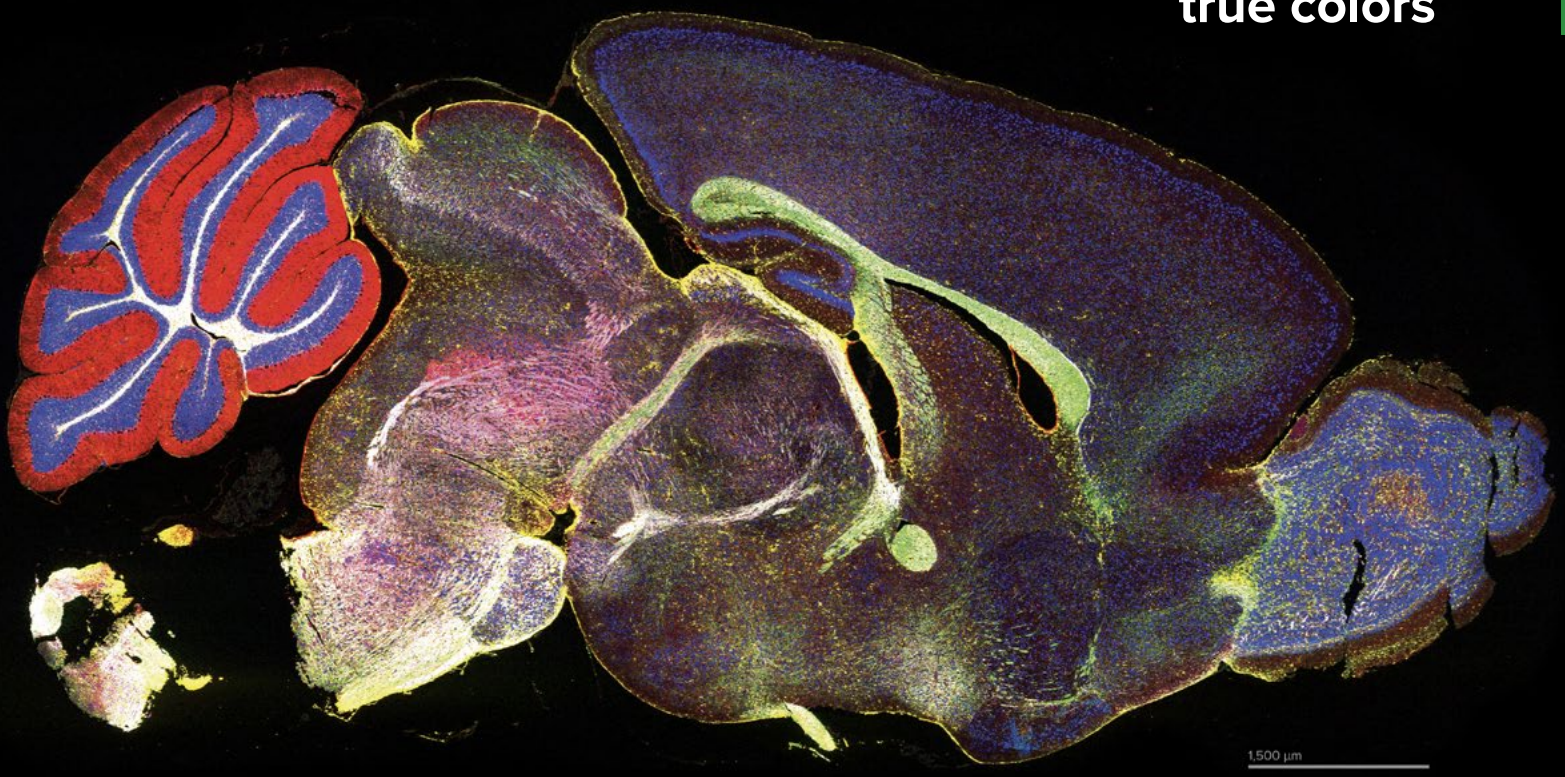


Simultaneous detection
n=40-plus markers



Real-time data

See the **true colors**



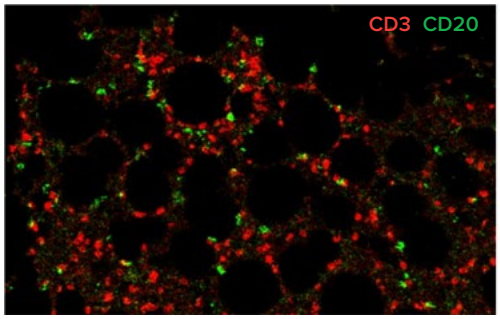
.96 cm² mouse brain sample
Imaged in 1 hour and 41 minutes, 28-marker

GFAP: astrocyte marker Neurofilament: neuronal cytoskeleton
NeuN: neuronal cell bodies S100B: activated glia MBP: myelinated axon

Interpret data **with confidence**

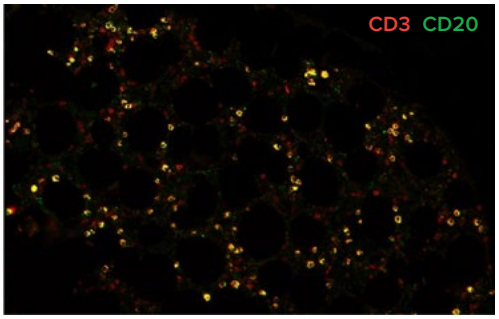
Quality and clarity of data are critical when deriving biological insights from limited, precious tissue samples. Clearly define areas **in any tissue type** – including lung, bone marrow, colon and brain – without autofluorescence interference. IMC technology utilizes metal-tagged antibodies, instead of fluorophores, eliminating background autofluorescence and spectral overlap.

IMC technology



Distinct B cells and T cells

CycIF



False positives (co-localized B and T cells)

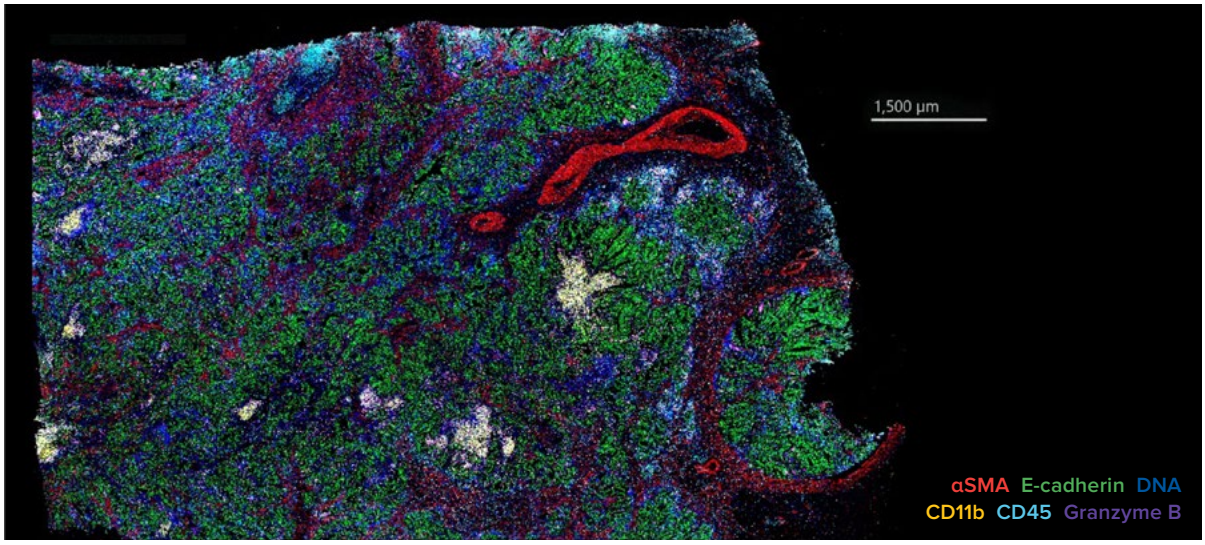
In bone marrow, cyclic immunofluorescence (cycIF) data (right) shows false positives, highlighted by co-localization of B cells (CD20+) and T cells (CD3+) (yellow). Conversely, distinct B cells (green) and T cells (red) can be seen with IMC technology (left).

Three imaging modes to accommodate any research

1 PREVIEW

Quickly scan your tissue to preview the whole slide in 20 minutes.

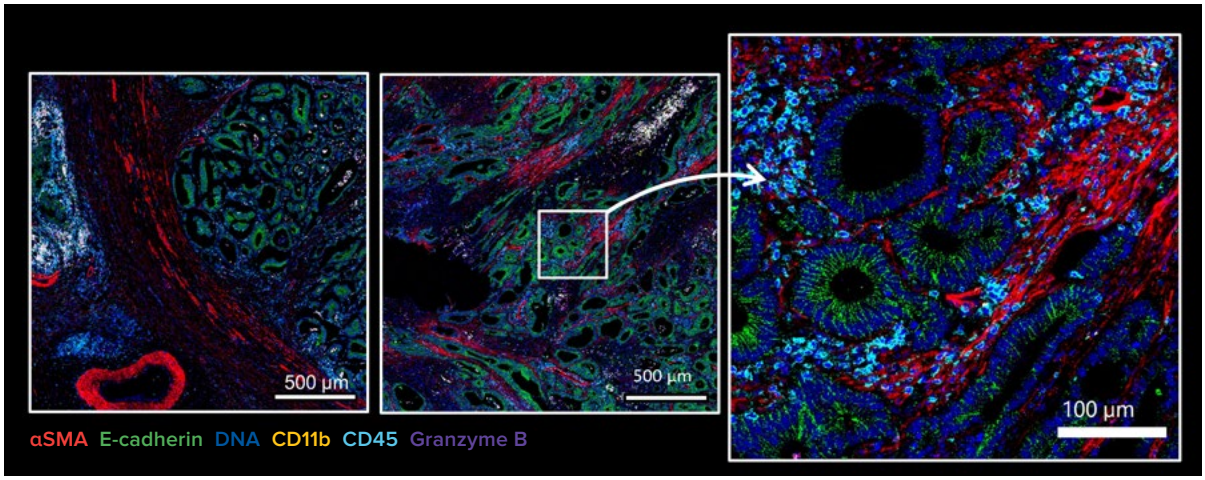
Make quick decisions to identify regions of interest and subsequent acquisition mode(s).



Number of markers: 42 | **Acquisition time:** 20 minutes | **Resolution:** 1 µm subsampling (28-pixel spaces) | **Tissue:** colon cancer

2 CELL

Dig deeper within regions of interest at single-cell resolution.



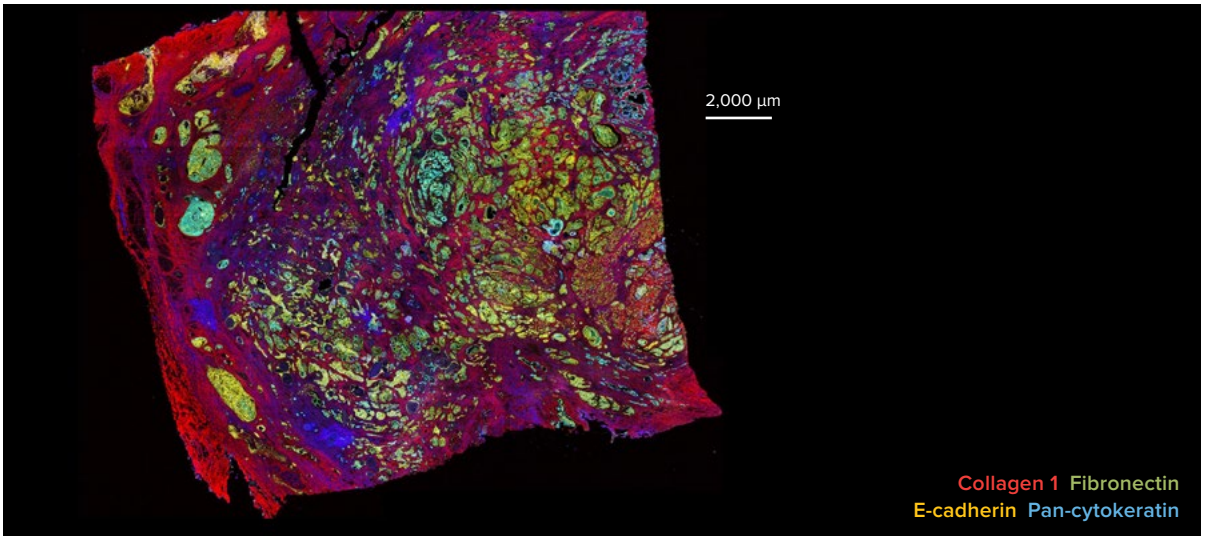
Number of markers: 42 | **Acquisition time:** 2 hours | **Resolution:** 1 µm | **Tissue:** colon

Fast-foward **spatial biology**

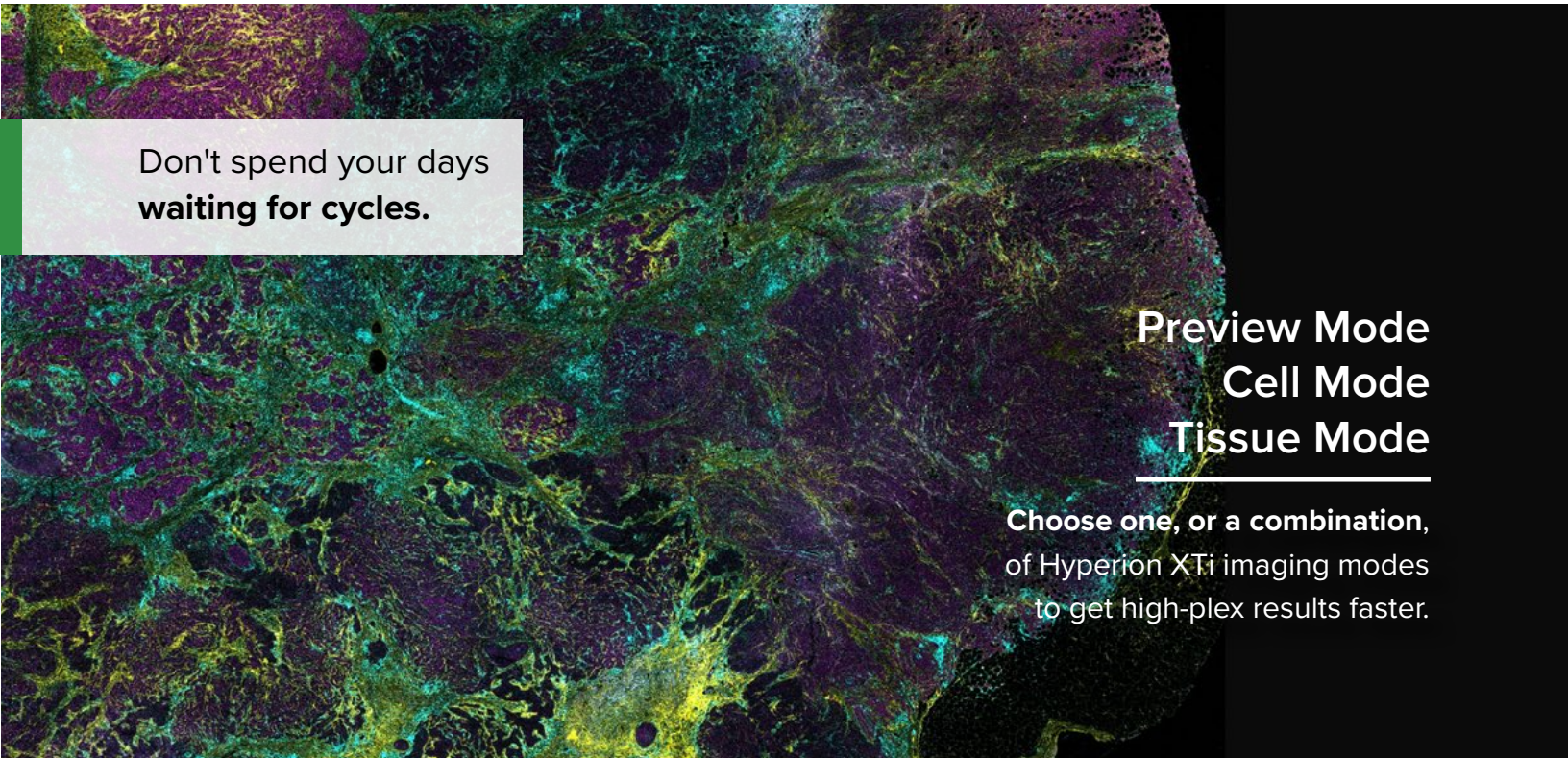
Multiplexed spatial mapping – without compromising speed.

3 TISSUE

Visualize heterogeneity with whole slide tissue imaging.



Number of markers: 41 | **Acquisition time:** 5 hours and 7 minutes | **Resolution:** 5 µm | **Tissue:** prostate cancer



Don't spend your days **waiting for cycles.**

Preview Mode
Cell Mode
Tissue Mode

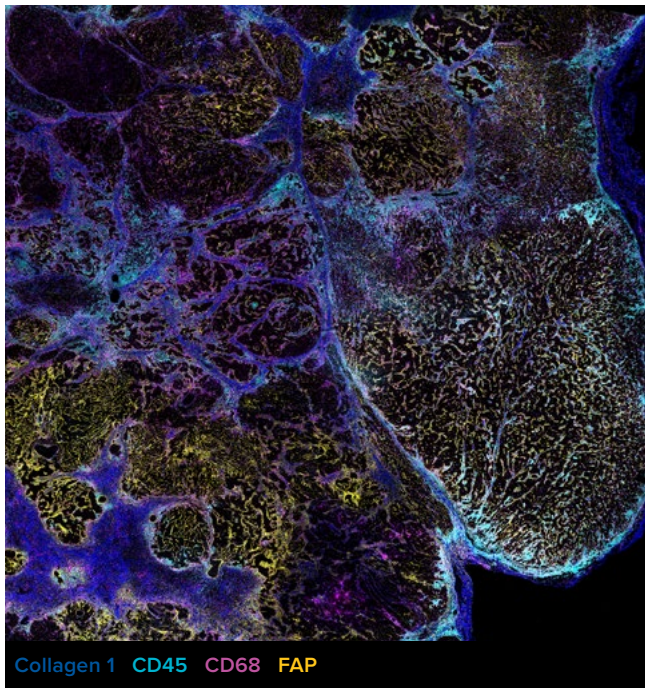
Choose one, or a combination, of Hyperion XTi imaging modes to get high-plex results faster.

Ready-to-go panels that **simplify spatial biology**

Start with application-specific panels

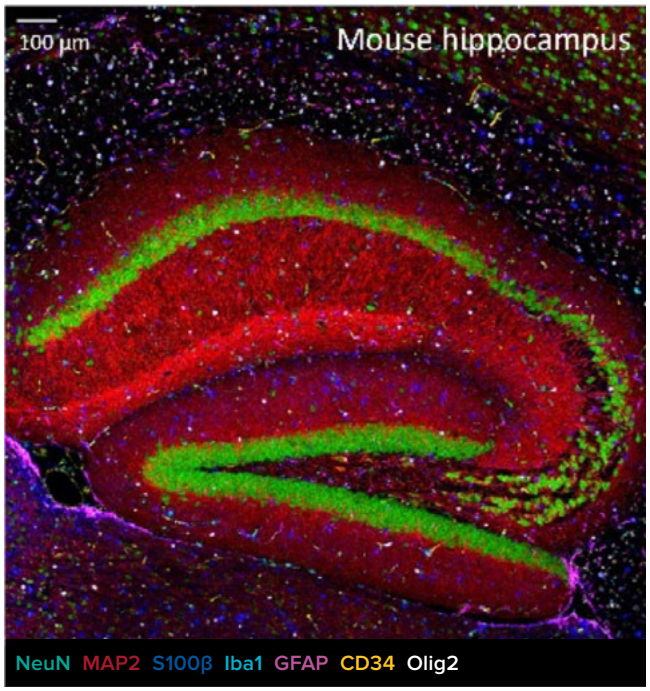
Choose from over 15 panels to easily target 40-plus markers.

Immuno-oncology



The Human Immuno-Oncology IMC Panel, 31 Antibodies and the Human Immune Cell Expansion IMC Panel, 7 Antibodies were combined to interrogate the tumor microenvironment in breast cancer. This identified numerous cell types such as cancer-associated fibroblasts (FAP) and lymphoid (CD45) and myeloid (CD68) cells as well as epithelial-to-mesenchymal markers, cell functional states and tissue architecture identification.

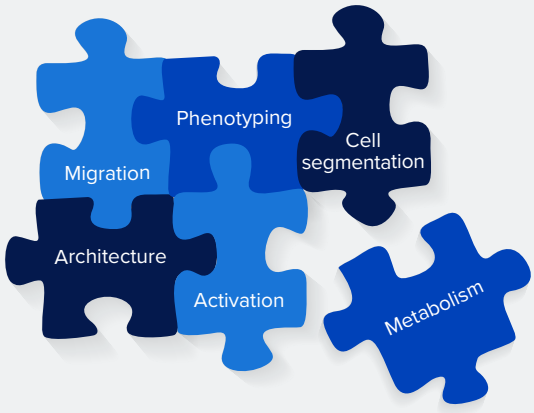
Neuroscience



The Maxpar Neuro Phenotyping IMC Panel Kit identifies distinct spatial positioning of major brain cell lineages in a normal mouse hippocampus FFPE sample. Scale bar size = 100 µm. Image size = 1,600 x 1,600 µm

Easily combine panels or customize targets of interest.

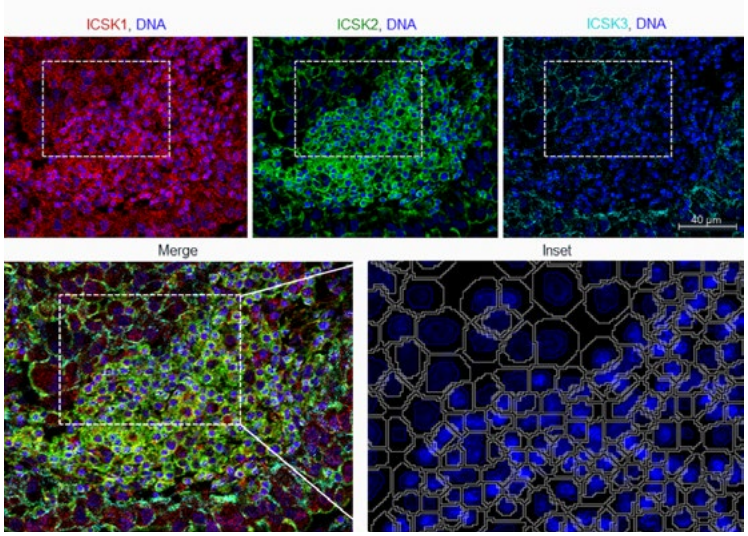
Review the full list of imaging panels here.



Add cell segmentation

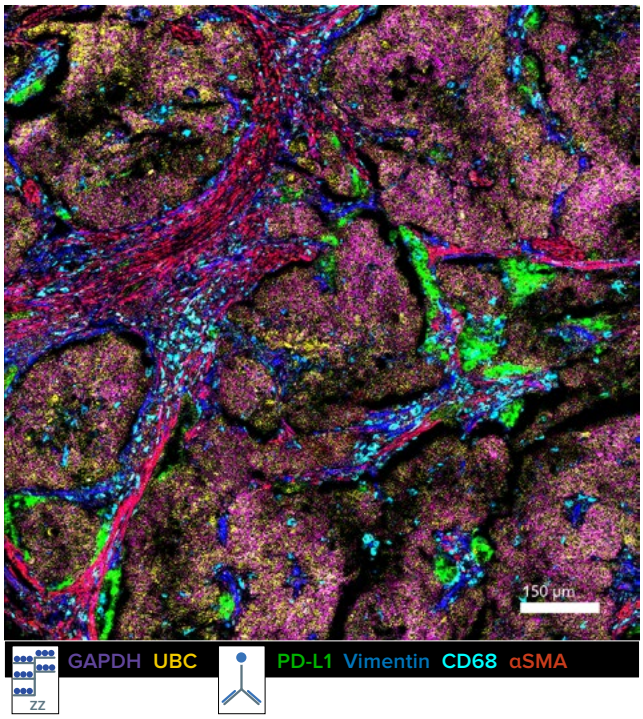
Solving the most important step in spatial imaging.

The Maxpar™ IMC Cell Segmentation Kit simplifies quantitative single-cell analysis in which cell types, cellular functions, and intra- and intercellular processes can easily be defined.



The Maxpar IMC Cell Segmentation Kit contains three markers that can easily be added to existing panels.

Human FFPE non-small-cell lung cancer tissue stained with the Maxpar IMC Cell Segmentation Kit. Scale bar is 40 µm. Red, ICSK1; green, ICSK2; teal, ICSK3; blue, DNA stain. Cell segmentation was generated using Visiopharm® Phenoplex™ software.



This image highlights RNA and protein co-detection in lung squamous cell carcinoma using the Hyperion XTi Imaging System and a 33-marker panel combined from three ready-to-go reagent kits.

Get deeper insights with RNA co-detection

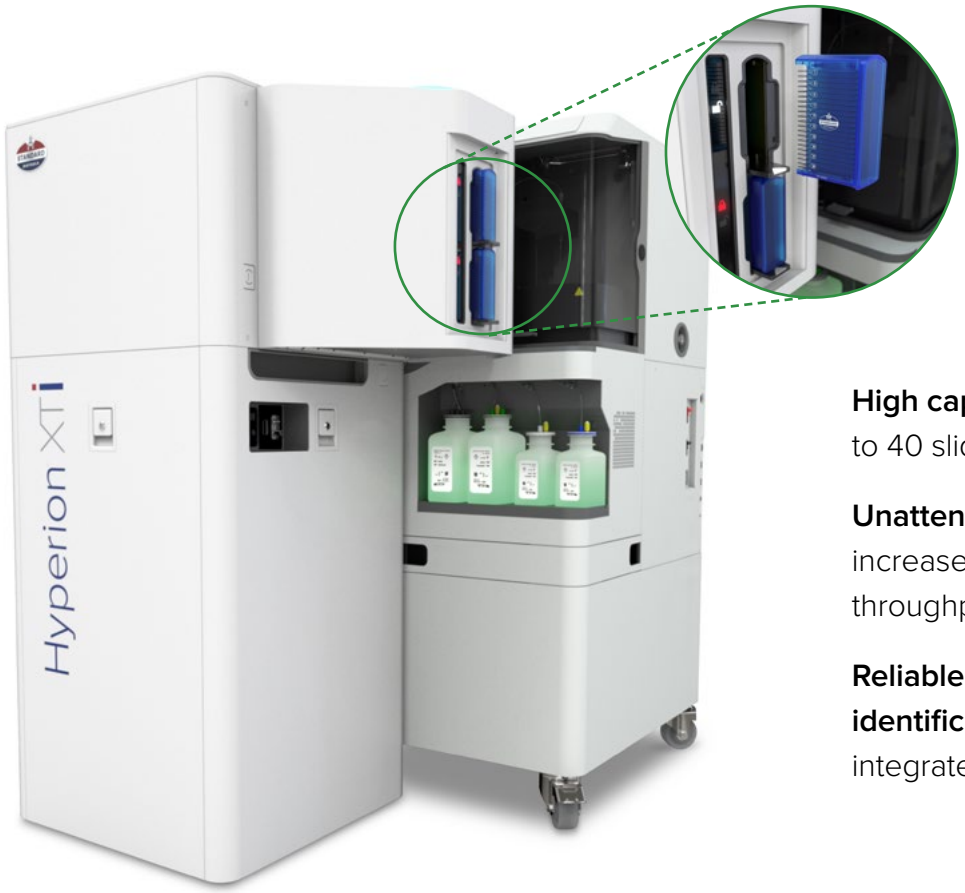
Combine spatial phenotyping with knowledge of the cell's transcriptome.

Detect protein and RNA on the same tissue sample to correlate transcriptional signatures and spatial context of pathogens, host cells or protein sources. Quantify mRNA, proteins and post-translational modifications to expand knowledge of cellular networks and cell type-specific gene expression.

40 slides | **40+** markers
24 hours

Walk-away automation

Incorporating a new level of throughput and efficiency, an integrated slide loader enables researchers to **load up to 40 slides and walk away**.



High capacity to load up to 40 slides at once

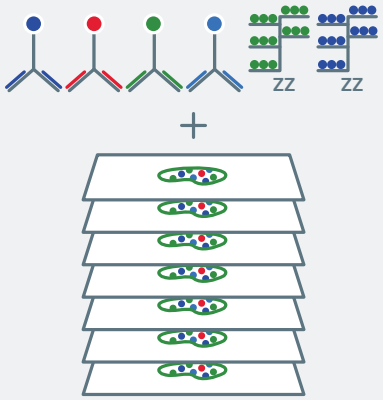
Unattended acquisition increases sample throughput 2–3x.

Reliable sample identification with integrated barcode reader

All-at-once staining

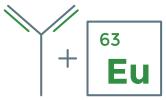
IMC technology uniquely enables a stain-all-at-once approach to streamline experiment workflows.

Large batches of slides can be stained simultaneously to eliminate batch effects and technical variation, then stored until you are ready for analysis.



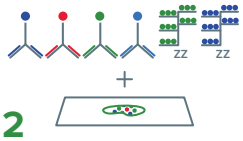
A workflow to **get results faster**

Automated slide loader
Image 40 slides per day



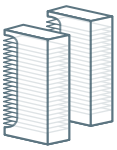
1

Modularized panels
Swap markers without panel revalidation.



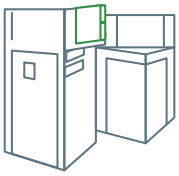
2

Batch staining
Stable antibodies enable stained slides to be acquired at any time.



3

Bulk slide loading
Load up to **40 slides** for automated imaging.



4

Walk-away acquisition
Automatically process slides, imaging 40-plus markers per sample simultaneously.

5

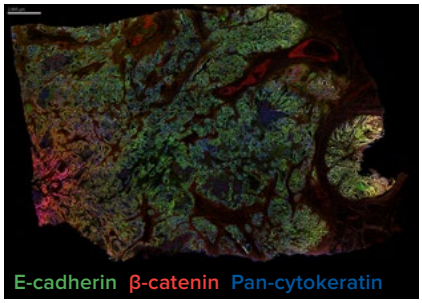
Real-time data
Visualize 40-plus markers in minutes.

Analysis templates so you can **work smarter**

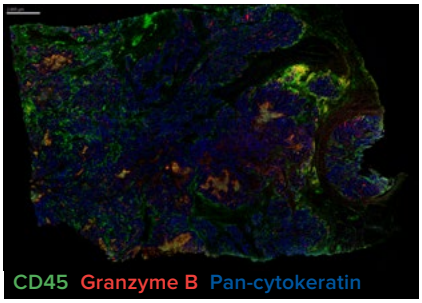
Accelerate data analysis using QuickViews templates from MCD™ SmartViewer. These templates allow you to **swiftly interpret** high-plex data, getting you results faster.

QuickViews

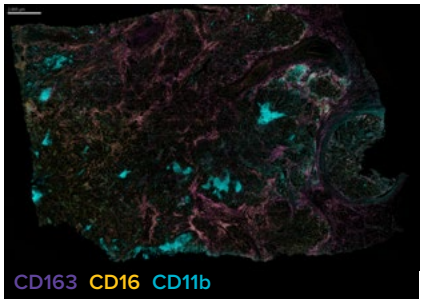
Metastatic transformation



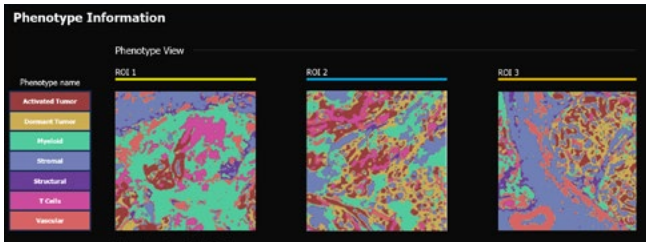
Immune cell infiltration and activation



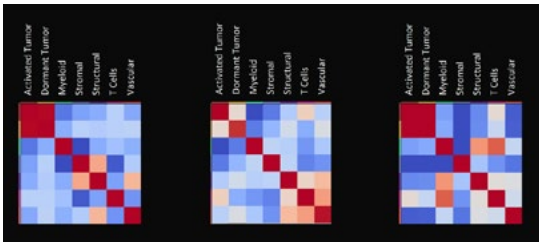
Myeloid immune cell infiltration



Phenotype analysis



Neighborhood



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Hyperion XTi Unlocking New Views Brochure

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