POSTER AT-A-GLANCE

Uncovering Spatial Biology of Mouse Tumor Immune Microenvironment Using Imaging Mass Cytometry

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MOUSE IO

The application of Imaging Mass Cytometry™ (IMC™) with a commercially available 28-parameter antibody panel kit designed for preclinical immuno-oncology studies offers critical insight into the spatial organization of the mouse tumor microenvironment (TME) by **defining tissue architecture, metastatic and growth potential of tumor cells and immune cell activation**.

KEY TAKEAWAYS

- The Maxpar® OnDemand™ Mouse Immuno-Oncology IMC Panel Kit reveals key details about tumor development, metastatic progression, immune cell infiltration, vascularization and metabolic activation.
- Neighborhood analysis unveils spatial relationships between cells, exposing relevant insights about tumor biology.
- IMC based multiplexed analysis together with a validated mouse IO panel can help accelerate preclinical drug discoveries.

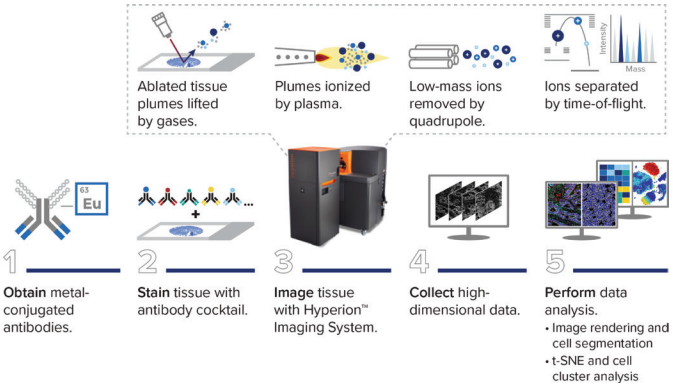
Background

Defining the heterogeneous spatial landscape of the TME is necessary for predicting disease progression and drug response. Here, we applied the Mouse IO IMC Panel Kit for multiparametric evaluation of the mouse TME. We present a consolidated single-cell analysis (SCA) pipeline by combining the panel kit with the Maxpar IMC Cell Segmentation Kit.

Study Design

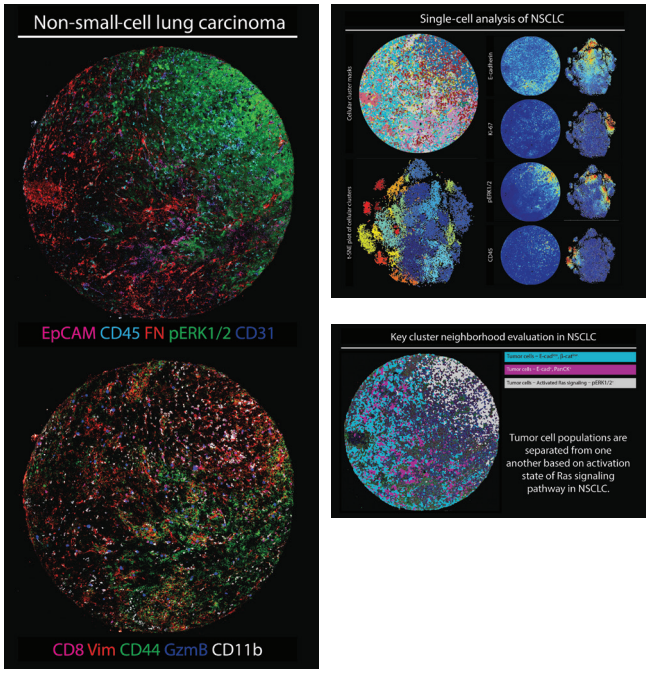
The 28-parameter antibody panel combines four intercompatible Mouse IO IMC Panel Kits, highlighting central features of the mouse TME. The full panel was applied on mouse tumor FFPE tumor microarray (TMA) as well as on normal mouse tissue.

Tissue slides were ablated using the Hyperion™ Imaging System. Qualitative data analysis, multiplexed image rendering and single-channel image extractions were performed using MCD™ Viewer.



Results

- Our results show a detailed breakdown of the TME in four distinct tumor types (non-small-cell lung carcinoma, B cell lymphoma, colon adenocarcinoma and renal carcinoma) without any data artifacts usually observed due to tissue autofluorescence and detachment.
- Quantitative SCA data demonstrates the percent cellular composition of the TMA.



The Mouse IO IMC Panel Kit reveals spatial positioning of relevant tumor and immune cell populations in mouse tumor of non-small-cell lung carcinoma.

PROTOCOL

Mouse IO

Maxpar OnDemand Mouse Immuno-Oncology IMC Panel Kit

The kit consists of 4 modular subpanels.

Mouse Tissue Architecture IMC Panel						
αSMA	CD31	CD44	CD45	Collagen 1	Fibronectin	Pan-cytokeratin
Mouse Cancer Cell Process IMC Panel						
β-actin	BRCA1	EpCAM	pERK1/2	p-tyrosine	Vimentin	β-catenin
E-cadherin	Ki-67	ps6				
Mouse Immune Phenotyping IMC Panel						
B220	CD3	CD4	CD8	CD11b	F4/80	Ly-6G
MHC class II						
Mouse Immune Activation IMC Panel						
FoxP3	Granzyme B	iNOS				

Ordering Information

Product Name	Product Number
Maxpar® OnDemand™ Mouse Immuno-Oncology IMC™ Panel Kit	9100005
Mouse Tissue Architecture IMC Panel Kit	9100001
Mouse Cancer Cell Process IMC Panel Kit	9100002
Mouse Immune Phenotyping IMC Panel Kit	9100003
Mouse Immune Activation IMC Panel Kit	9100004
Maxpar IMC Cell Segmentation Kit	201500

Scan the QR code to see the full digital version of the poster.

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