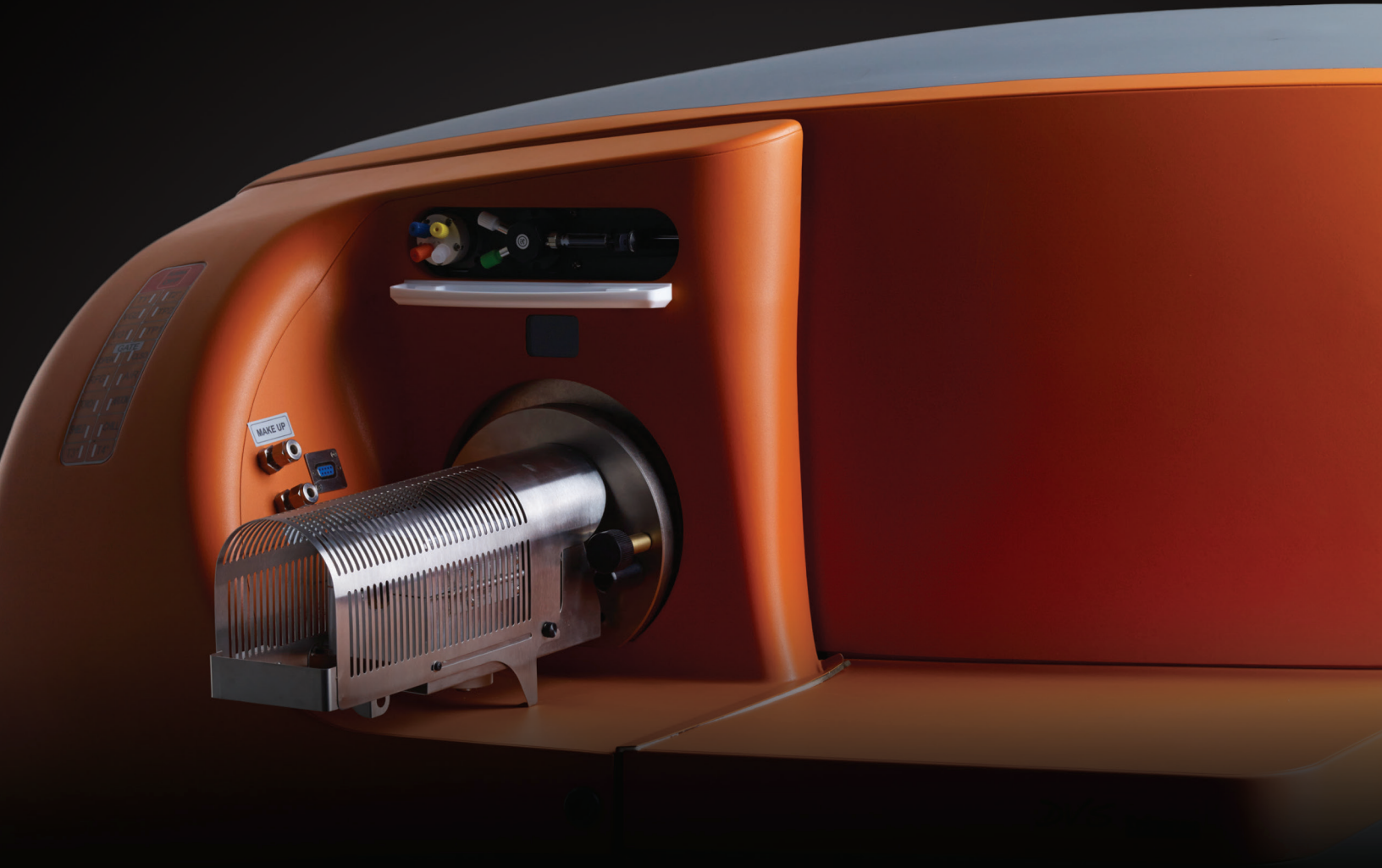




CyTOF 2

Mass cytometry system



Unveil new cell types and function
with high-parameter protein detection

DISCOVER MORE. IMAGINE MORE.

MASS CYTOMETRY. THE FUTURE OF CYTOMETRY TODAY.

Mass cytometry resolves multiple metal probes per cell with minimal signal overlap, maximizing the information obtained from a single sample. With over 120 detector channels and over 35 isotopic probes, mass cytometry provides researchers with an unparalleled ability to phenotypically and functionally profile cells from normal and diseased states.

The Fluidigm® line of reagents, instrumentation, and data analysis tools provides everything you need for novel discovery applications using mass cytometry, including:

- The state-of-the-art CyTOF® 2 mass cytometer
- The Maxpar® line of metal-conjugated probes, panel kits and labeling reagents
- High-dimensional analysis tools from Fluidigm Cytobank

CyTOF APPLICATIONS

Powerful. Proven Research.

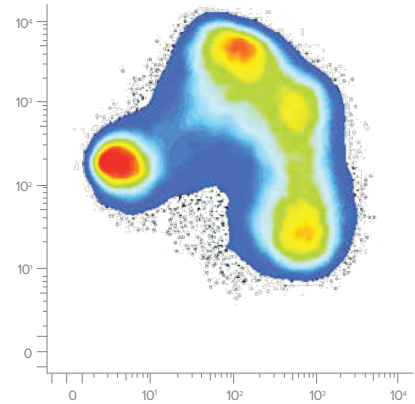
Mass cytometry enables comprehensive profiling of cellular phenotype, signaling state, cytokine/chemokine expression and viability. It has also been used in transformative high-dimensional studies in diverse disciplines including immunology, cancer research, stem cell biology and drug profiling. Recent examples from the published literature include:

Cytokine and surface profiling

Simultaneous analysis of 34 phenotypic and functional markers defined a continuum of cells connecting naïve and memory CD8+ T cell subsets. Along the continuum, cells were functionally distinguishable based on the unique array of cytokines they express, allowing for an unappreciated flexibility in orchestrating pathogen responses.

Cell signaling

Mass cytometry analysis provided a systemwide view of immune signaling responses of the human hematopoietic system. Analysis of the phenotyping-signaling 31-marker panel for 24 treatment conditions provided simultaneous characterization of all major bone marrow subsets, against which drug action and disease can be compared for mechanistic studies and pharmacologic intervention.



Deep phenotypic and functional profiling of CD8+ T cells

Newell, E.W. et. al. *Immunity* 36, 142.



Comprehensive analysis of hematopoietic system signaling responses

Bendall SC, Simonds EF, et. al. *Science* 332, 687

CyTOF 2

Discover more per sample.

The CyTOF 2 mass cytometer simultaneously resolves multiple parameters with minimal signal overlap, providing unprecedented insights into the functional and phenotypic complexity of biological systems at the single-cell level.

The CyTOF 2 analyzes cells labeled with a panel of reagents conjugated to stable metal isotopes using cutting-edge time-of-flight mass cytometry technology.

With over 120 detection channels and 35 Maxpar metal probes, CyTOF 2 simplifies panel design and unlocks the biological complexity inherent in cellular heterogeneity.



MAXPAR REAGENTS

Simply more.

Fluidigm offers a full line of reagents for high dimensional panel design, including metal-conjugated antibodies, application specific panel kits, as well as reagents for custom antibody labeling and nucleic acid staining.

Maxpar metal-conjugated antibodies

Fluidigm offers a large selection of Maxpar metal conjugated antibodies.

- Pre-conjugated and quality controlled for optimal experimental results
- Wide selection of human and mouse targets to cover a variety of applications
- Antibodies are sourced from the most reliable antibody vendors

Maxpar Panel Kits

Getting started with mass cytometry is now easier than ever. Maxpar Panel Kits provide all the necessary reagents for profiling human and mouse systems by mass cytometry. The kits contain:

- Sample prep staining buffers and detailed protocol optimized for mass cytometry
- Nucleic acid intercalator for cell identification
- A panel of up to 17 pre-titrated metal-conjugated phenotypic antibodies, which can be combined with additional Maxpar antibodies to deeply profile your system of interest

Maxpar Metal Labeling Kits

Maxpar labeling kits for over 35 different metals are available from Fluidigm for conjugating metals to antibodies or intracellular proteins. The labeling kits utilize a traditional approach of adding a metal polymer tag to the Fc region of the antibody using a maleimide linker and disulfide reduction chemistry.

Nucleic Acid Intercalators

Fluidigm provides two nucleic acid intercalators, one containing natural-abundance Iridium and the other containing ¹⁰³Rh, for live-dead discrimination and cell identification in routine mass cytometry.

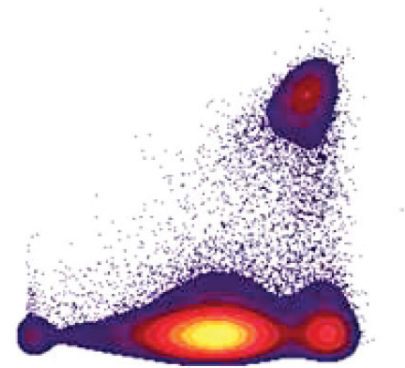
DATA ANALYSIS

Powerful analysis options.

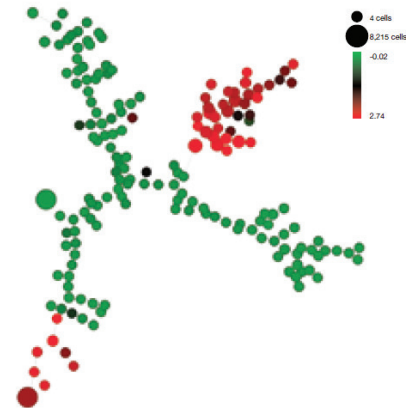
Mass cytometry experiments routinely measure dozens of functional and phenotypic parameters in millions of single cells, output as .txt and .fcs files. Analysis of such high-dimensional datasets is performed using a tool kit that includes not only traditional histograms and bivariate plots, but also novel clustering algorithms, neural networks, and dimensionality reduction methods.

Fluidigm has partnered with Cytobank to provide Fluidigm Cytobank, a cloud-based platform that offers an extensive suite of powerful tools for analysis of mass cytometry data, including:

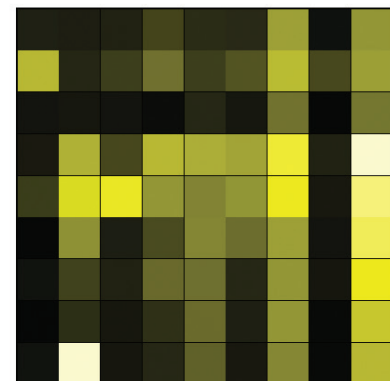
- The SPADE clustering algorithm for high-dimensional panel analysis
- Histograms, bivariate plots, gating tools and statistics for traditional cytometric analysis
- Heat maps and dose response curves for comprehensive summarization of experimental data
- Intuitive management of files and analysis results, with secure storage and backup
- Web-based tools for sharing data and analysis with collaborators



Bivariate plot



SPADE



Heat map



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