The Maxpar Direct Immune Profiling System

30 markers. 1 tube.
5-minute data analysis.

FLUIDIGM®

The Maxpar® Direct™ Immune Profiling System is the first complete sample-to-answer solution for high-dimensional immune profiling of human PBMC and whole blood.

Designed as a simple single-tube workflow, the system brings together CyTOF® technology, a dry 30-marker antibody panel and automated analysis with Maxpar Pathsetter™ software so you can easily quantify 37 immune cell populations with performance you can trust.

Highlights

Comprehensive—Profile 37 immune cell populations from PBMC or whole blood with an optimized 30-marker panel.

Efficient—Simple single-tube workflow with pushbutton reporting. Just add sample and go.

Reliable—Produce consistent results lot-to-lot, run-to-run and site-to-site.

The new standard in immune profiling.

A. Single-tube antibody panel design

CD3	CD19	CD45	CD123	CCR7
CD4	CD20	CD45RA	CD127	CXCR3
CD8	CD25	CD45RO	CD161	CXCR5
CD11c	CD27	CD56	CD294	HLA-DR
CD14	CD28	CD57	CCR4	IgD
CD16	CD38	CD66b	CCR6	TCRγδ

B. Just add sample and GO!

1

Stain
and process PBMC or whole blood samples in **ready-to-use assay tube**.

2

Acquire
data with **customized acquisition template** on the Helios™ mass cytometer.

3

Report
population frequencies, QC metrics and data plot displays with **Maxpar Pathsetter software**.

Figure 1. The new standard in immune profiling. A. All 30 antibodies are provided dry in a single tube for easy sample addition. Cell-ID™ Intercalator-103Rh is included in each tube to measure cell viability. B. The streamlined workflow for the Maxpar Direct Immune Profiling Assay with Maxpar Pathsetter software.

Immune cell profiling without compromise

The Maxpar Direct Immune Profiling Assay™ sets a new standard for comprehensive immunophenotyping of human PBMC and whole blood by enabling simultaneous identification and enumeration of 37 immune cell subsets (Figure 2).

The highly multiplexed 30-marker antibody panel was developed with input from expert immunologists in academia and biopharma and builds on the panels developed by the Human ImmunoPhenotyping Consortium[1].

Designed using industry-proven antibody clones, this assay provides you with the broadest single-tube view of the immune system from each precious sample. You no longer need to compromise your study design due to the limitations of fluorescence cytometry.

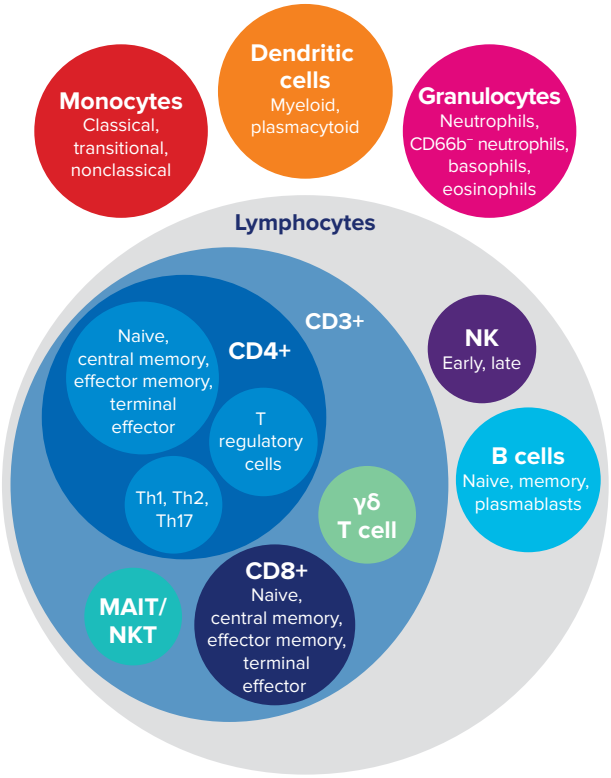


Figure 2. A comprehensive immune profile. The 37 immune cell subsets identified using the Maxpar Direct Immune Profiling Assay and Maxpar Pathsetter software.

Flexible by design

While the Maxpar Direct Immune Profiling Assay provides excellent immune cell coverage, you can easily add up to seven new antibodies to support your study goals (Figure 3). Because mass cytometry has minimal channel crosstalk and a broad detection range, the expansion of high-parameter panels is simplified—a significant advantage over fluorescence cytometry.

Easily obtain labeled antibodies.

- Choose from the expansive Fluidigm catalog of Maxpar metal-labeled antibodies.
- Label your own antibodies using a Fluidigm Maxpar labeling kit.
- Use the custom conjugation service for guaranteed antibody labeling by Fluidigm experts.

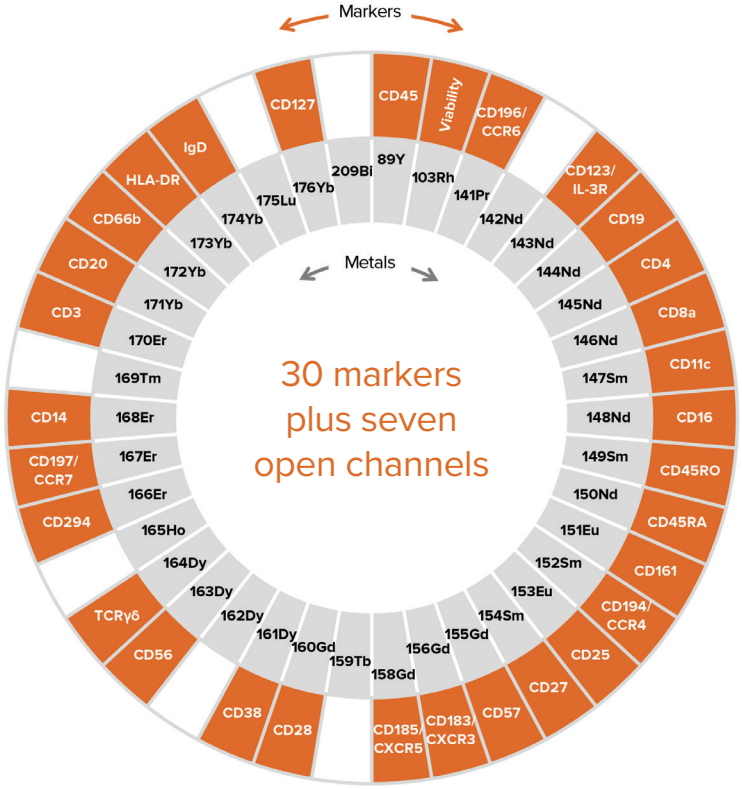


Figure 3. The 30 markers plus seven open channels in the Maxpar Direct Immune Profiling Assay. The seven open channels are 142Nd, 159Tb, 162Dy, 165Ho, 169Tm, 175Lu and 209Bi. For a full list of antibodies, clones and metals in the panel, refer to the Technical Data Sheet PRD036.

Maxpar Pathsetter:
Your personal data analysis expert

Maxpar Pathsetter is a fully automated reporting and data analysis solution that automatically identifies 37 immune cell types in FCS files from samples processed with the Maxpar Direct Immune Profiling Assay.

Developed using probability state modeling, a proven high-parameter analytic approach[2], the software eliminates the variability of manual gating and provides an efficient and reliable solution for longitudinal and multisite studies. No more waiting for results—just click a button and go.

With Maxpar Pathsetter you can get all this and more in as little as 5 minutes:

- Automated selection and enumeration of single viable cells
- Staining quality assessment for all 30 markers in each sample
- 2D dot plots and overlay plots (probability state modeling readout) for each population
- A high-dimensional Cen-se™ (next-gen t-SNE) map of identified populations
- A report summary for each population, with cell number, percent of total cells and percent of parent population
- A report of QC metrics for acquisition and modeling quality

Maxpar Pathsetter analytic report

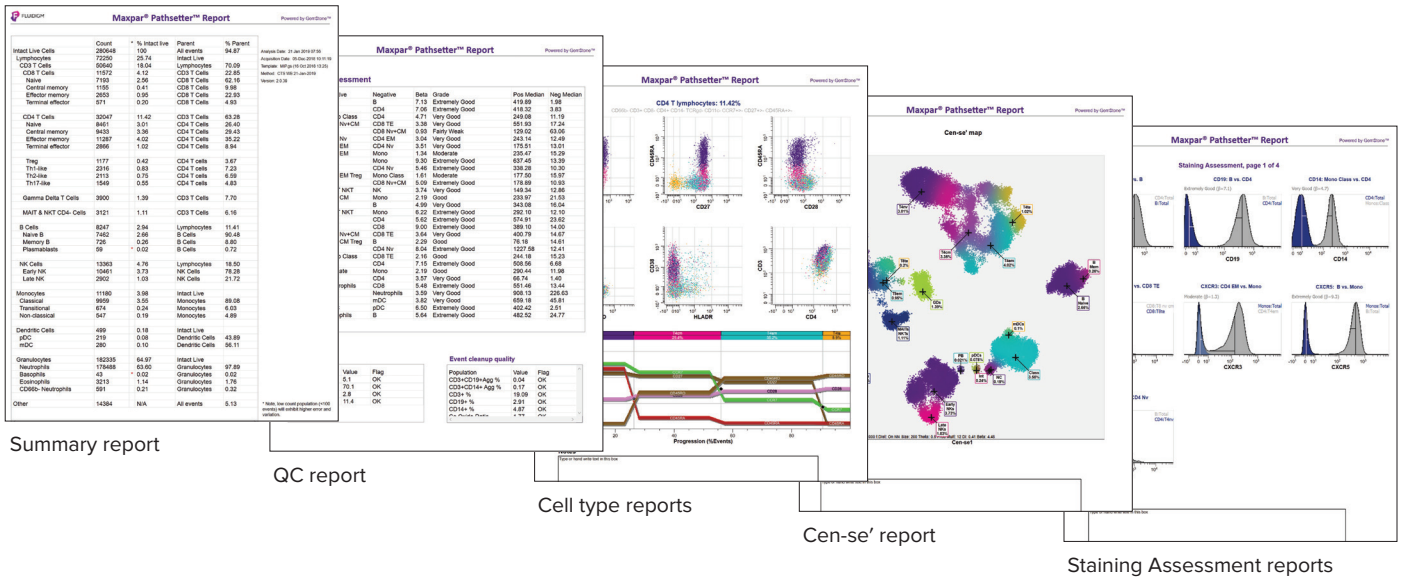


Figure 4. The Maxpar Pathsetter analytic report. Representative Pathsetter report pages (left to right): summary report showing all population statistics; QC report with Staining Assessments and performance alerts; cell type reports with associated plots; Cen-se′ report with a map of selected populations, color-coded, labeled and quantified; Staining Assessment review reports with histograms for all markers.

1. Maecker, H.T. et al. “Standardizing immunophenotyping for the Human Immunology Project.” *Nature Reviews Immunology* 12 (2012): 191–200.
2. Bagwell, C. Probability state modeling: a new paradigm for cytometric analysis. In: Litwin, V., Marder, P., editor. *Flow Cytometry in Drug Discovery and Development.* Hoboken NJ: John Wiley & Sons, Inc.; 2010. p 281.

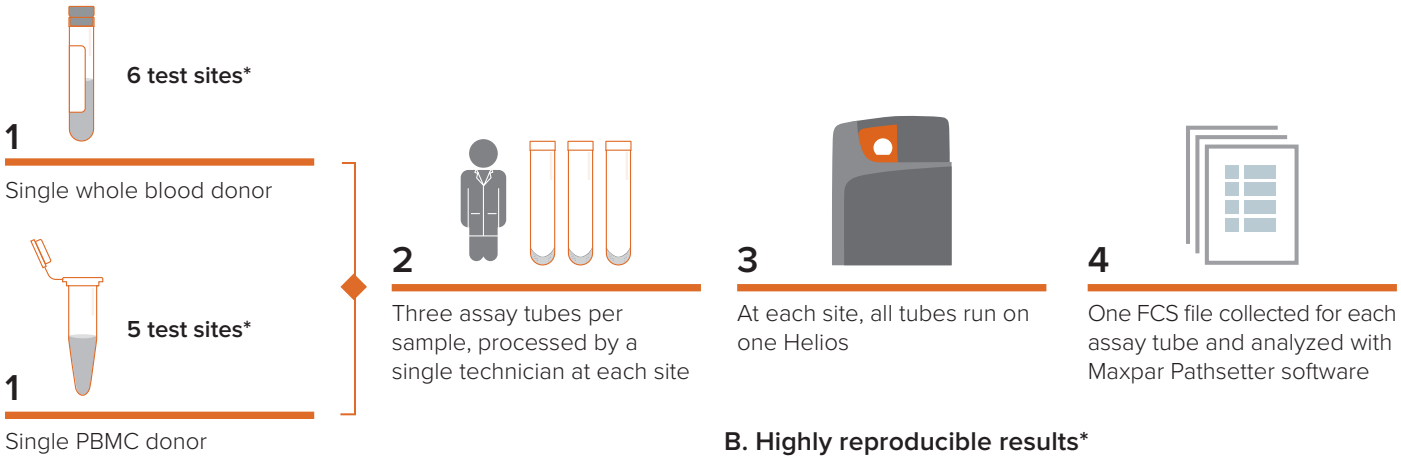
Robust site-to-site reproducibility: A case study

Clinical and translational research demands reproducible and reliable immune profiling. This is especially important when samples are processed and analyzed by different technicians or at different study sites.

The Maxpar Direct Immune Profiling System is designed with several features that help deliver consistent performance you can trust.

- Streamlined workflows and reduced pipetting errors with single-tube, dry panel format
- Seamless data collection with assay-specific Helios acquisition template
- Fast, objective and reliable reporting with Maxpar Pathsetter automated analysis
- Lot-to-lot reliability with rigorous manufacturing QC of dry antibody assay tubes

A. Multisite study design



In the multisite study presented above, the variability in immune cell population frequencies from single-donor PBMC and whole blood samples was measured across multiple independent testing sites (Figure 5A). The immune profiles measured in this study were highly reproducible between the sites, instruments and technicians (Figure 5B).

B. Highly reproducible results*

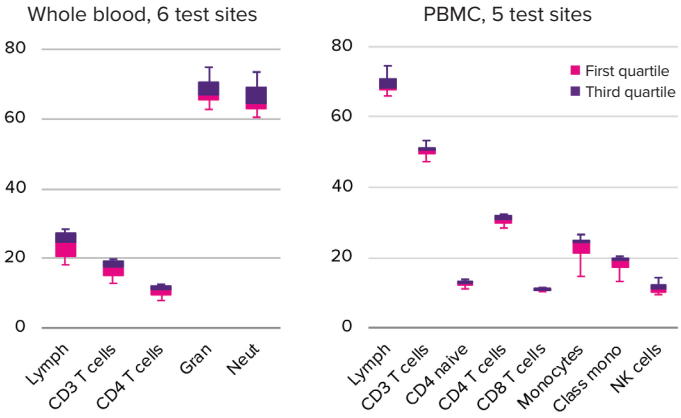


Figure 5. Study design and results. A. Design of multisite testing study. B. Interquartile plots for percent of single viable cells across all sites. Filled box, first quartile (pink) to third quartile (purple); color change, median; error bars, min/max values; open circles, outliers

*Internal document ID 120001-REC-050

Ordering information

Product Name	Catalog Number
Maxpar Direct Immune Profiling Assay, 30 Marker—25 Tests	201325
Maxpar Pathsetter	401018

Learn more at **fluidigm.com/immuneprofile**

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