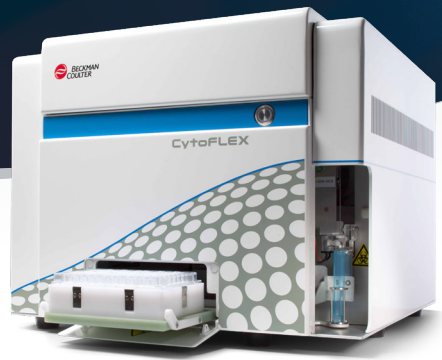
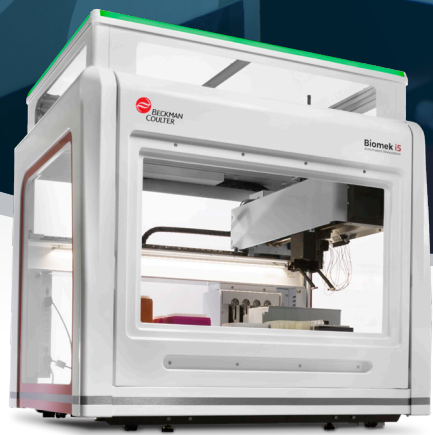




EFFICIENT WORKFLOWS WITH
**AUTOMATED
FLOW CYTOMETRY**



EMPOWER
life-changing decisions.





Flow Cytometry in Drug Discovery and Development

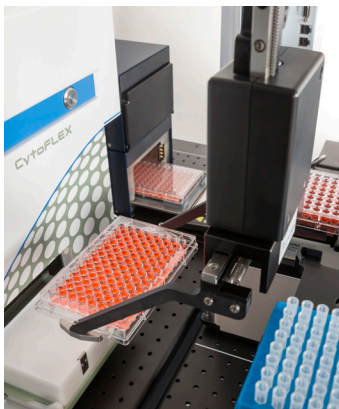
The discovery and development of novel drug candidates is a highly complex, time-consuming process. Flow cytometry is an invaluable technique for the analysis of cell populations; with its capacity to quickly generate wide multiparameter data at a single cell level, it is the ideal technique to use at different stages in the drug discovery process, from target identification and validation, through toxicological assessment. However, flow cytometry has been traditionally limited to applications with low numbers of samples due to the complexity of sample preparation and reproducibility challenges.



Beckman Coulter Life Sciences: A Strong Partner for Flow Cytometry Solutions for Complex Cell-Based Assays

Creating high-quality experiments can and should be easy. At Beckman Coulter Life Sciences, we are committed to providing tools to simplify complex assays while improving the quality of data used to make critical decisions in the drug development process.

From sample preparation to data acquisition and analysis, our flow cytometry solutions minimize variability, increase rigor and produce reliable data at every step of the process.



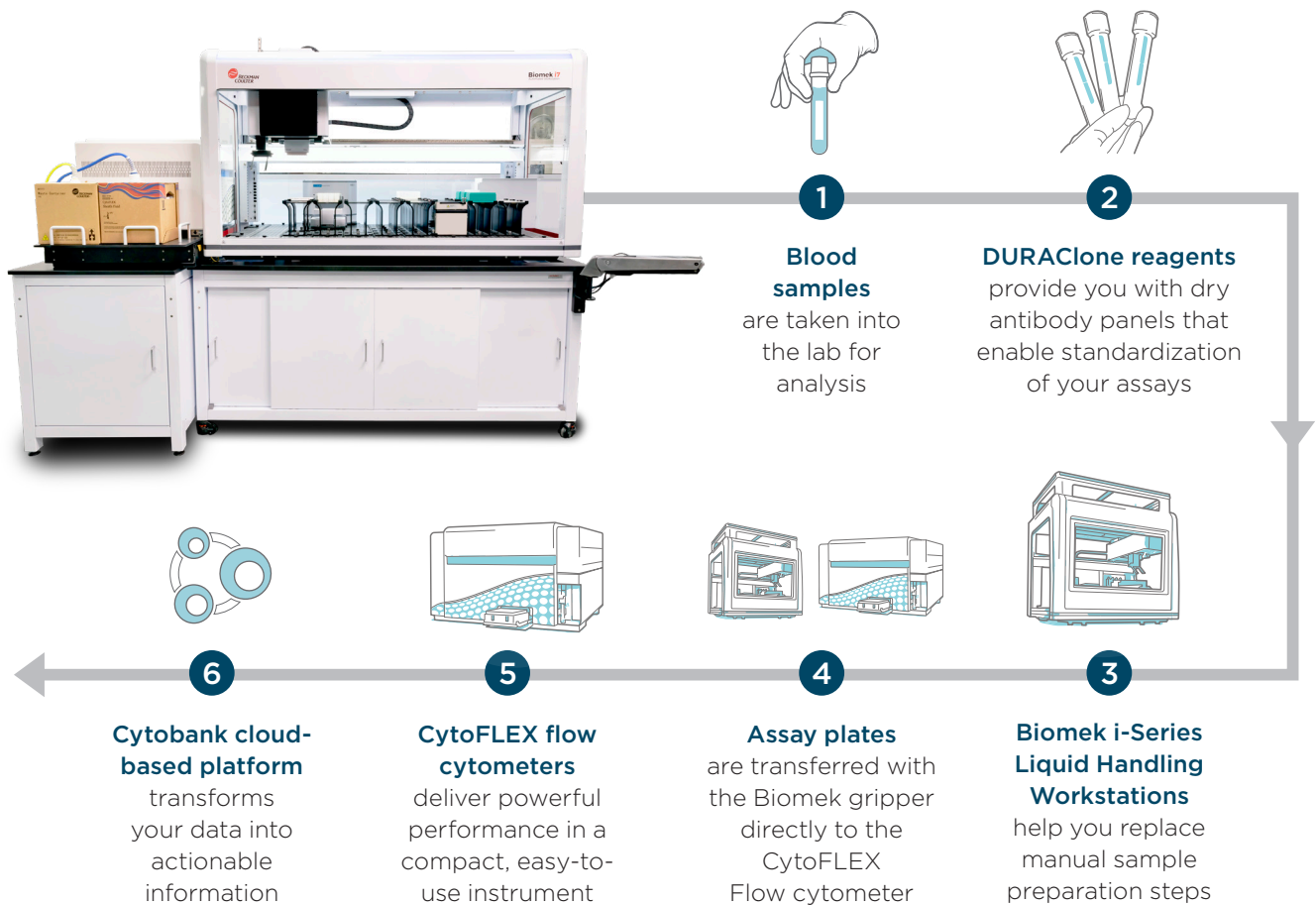
- Optimize your method with support from our Application Scientists.
- Simplify the workflow and prepare high-quality samples using DURA Innovations technology that makes reagent preparation easy and efficient.
- Confidently automate and build well-controlled flow cytometry experiments to generate reproducible data by integrating the CytoFLEX flow cytometry analyzer with a Biomek i-Series workstation. Both systems include features that facilitate compliance with 21 CFR Part 11.
- Increase sample throughput with walk-away processing of high-complexity assays using the Automation Assistant plate feeding system.

Automating Flow Cytometry For Simplified, High-Speed Workflows With Improved Reproducibility

Integrating a CytoFLEX analyzer with a Biomek i-Series Workstation and using dry antibody reagent panels can simplify your workflow, enhance throughput and minimize operator variability. Together, they enable automation of your workflow's most critical steps, including sample preparation and acquisition, and provide standardization across sites. Additionally, using the Cytobank platform allows you to access fully integrated and quality-tested tools for advanced cytometry data analysis and statistical evaluation as well as structured data management.

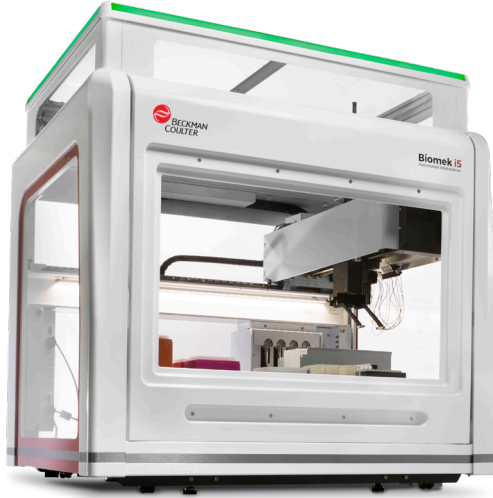
A full spectrum of customized integrations, including orbital plate shakers, centrifuges and incubators, allows automation of an entire workflow around your integrated CytoFLEX flow cytometer and Biomek workstation. Automation can be further scaled up by incorporating robotic plate handling for larger workflows. Thanks to our experience, we can meet your automation needs while providing you with a customizable solution that is right for your workflow.

To ensure the reliability and integrity of electronic records and signatures and meet regulatory requirements, our CytExpert software tools for CytoFLEX analyzers facilitate compliance with 21 CFR part 11.

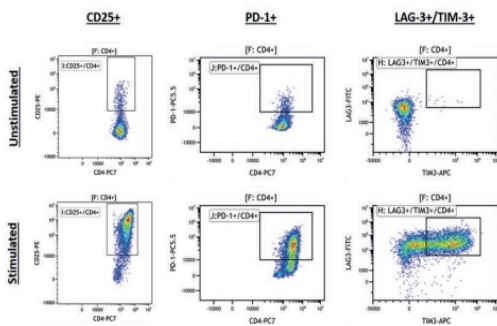


Tools To Automate Your Flow Cytometry Workflow

Biomek i-Series Automated Workstations



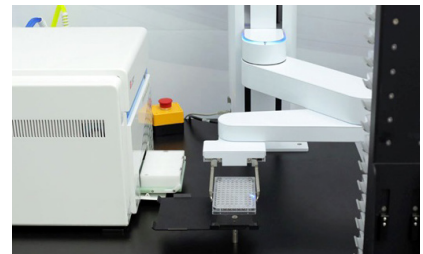
- **Multistep sample processing** - Integrate on-deck centrifugation or plate washers for higher-complexity sample preparation requirements.
- **HEPA Filtration** or additional sample-, environmental- and/or operator-protection solutions available.
- **Easy integration of hotel/tower shakers** supports the need for long-term shaking incubation.
- **Incubation** - To meet the requirements for assay plate temperature, CO₂ and humidity environment needs.
- **Buffer & reagent management** - Temperature-controlled devices help maintain the integrity of your reagents, buffers and cells.



Representative data plots for CD25+, PD-1+, and TIM-3+/LAG3+ populations for both unstimulated and anti-CD3/CD28 stimulated LIVE CD3+/CD4+ T-cells. Unstimulated and anti-CD3/CD28 stimulated PBMC (3 day) cultures were stained with CD45-Krome Orange, CD3-APC-Alexa Fluor® 750, CD4-PC7 and CD8-Alexa Fluor® 700 dried antibody cocktail with addition of liquid reagents LAG-3-FITC, CD25-PE, TIM-3-APC, PD-1-PC5.5 and ViaKrome 808 fixable viability dye, in 8 replicates each in a 96 deep well plate, using an automated stain/wash method on the CytoFLEX-Biomek i7 workstation. Wash steps were performed with an onboard integrated Agilent microplate centrifuge and samples were automatically acquired on an integrated CytoFLEX LX flow cytometer. Data analysis was performed using Kaluza data analysis software.

Automation Assistant

The Automation Assistant integrates the CytoFLEX flow cytometry analyzer with a SCARA arm, which increases sample throughput with walk-away processing of high-complexity assays.

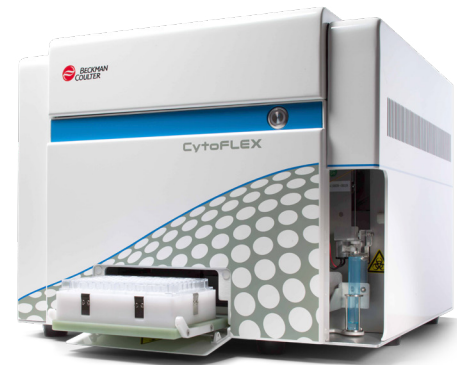


- Easily configured to accommodate the number of plates needed for your workflow.
- Accommodates multiple CytoFLEX instruments, ambient plate hotels and automated incubators to scale to your workflow needs.
- Pause the automation to add more plates to run them sequentially or to process straight away.
- Flexible, user-friendly Automation Assistant software schedules and controls the plate processing and allows real-time plate monitoring of sample acquisition.

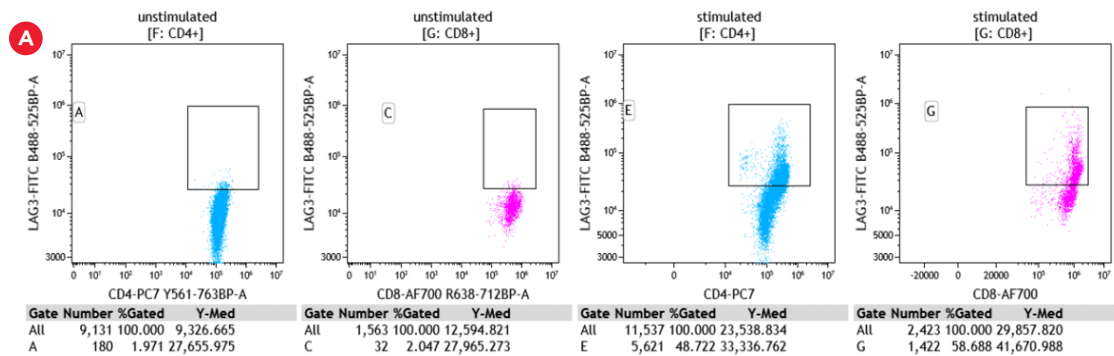
CytoFLEX Flow Cytometry Platform

The CytoFLEX Platform is a revolutionary system presenting optimal excitation and emission, minimizing light loss and maximizing sensitivity.

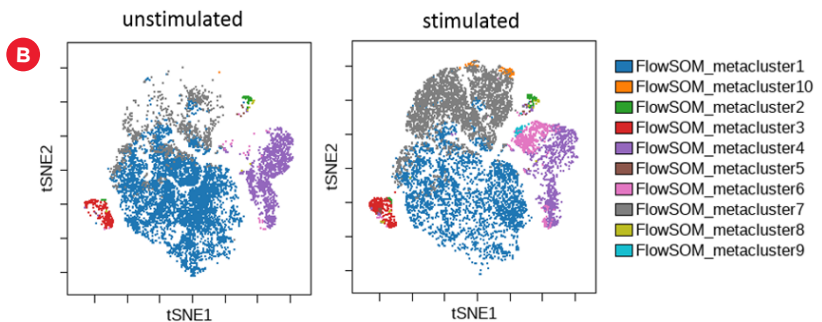
This platform of benchtop flow cytometers includes three distinct models—CytoFLEX, CytoFLEX S and CytoFLEX LX—all delivering powerful performance in a compact, easy-to-use instrument.



- Exquisite sensitivity
- Flexibility to upgrade by adding additional parameters
- Intuitive software to facilitate multicolor analysis
- When installed in Electronic Management mode, 21 CFR Part 11 compliance tools are enabled.



Analysis of Stimulated and Unstimulated PBMCs. PBMCs were isolated from blood from a healthy donor and cultured for 4 days either with (stimulated) or without (unstimulated) anti-CD3 and anti-CD28 coated beads. Cultured cells were stained using a custom-made, dry, unitized deep-well plate-based LUCID assay prepared in our antibody LUCID Panel Design and Cocktailing Custom Service consisting of backbone markers CD45-KrO, CD3-APC-A750, CD4-PC7, and CD8-A700. Additional markers for activation state were added as liquid add-ins, including CD25-PE, LAG-3-FITC, TIM-3-APC and PD-1-PC5.5 and ViaKrome 808 Fixable Viability Dye. Data was acquired using CytExpert software and analyzed using Kaluza Analysis Software. **(A)** Lag-3 expression in unstimulated (blue dot plots) or stimulated (pink dot plots) CD4+ and CD8+ populations. **(B)** Analysis of same wells using FlowSOM from Cytobank.



88% of surveyed organizations agree that CytoFLEX flow cytometers were easy for lab personnel to learn and master.

— TechValidate survey of 224 users of the CytoFLEX Flow Cytometer from Beckman Coulter Life Sciences

Reduced Assay Variability From Reagents

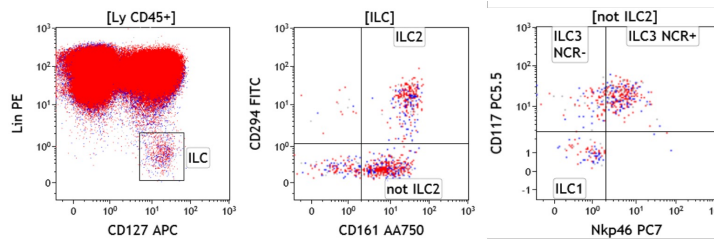
DURAClone Antibody Panels**



Antibody panel development requires a high level of expertise, and may consume critical laboratory resources. In addition, many of the key antibody reagents used tend to degrade over time due to handling and storage.

Streamline your flow cytometry experiments by using expert-proven, optimized DURAClone dry, pre-formulated antibody panels for your drug discovery assays. DURAClone kits provide you with all reagents you need per test, significantly reducing handling of antibody reagents, and offering prolonged stability.

A Comparison of liquid and dried staining on PBMC

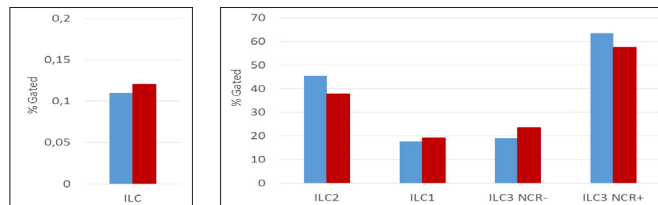


Dry vs. Liquid evaluation study using PBMCs.

To minimize pipetting, dried antibodies in DURAClone format were tested on PBMC samples in comparison to liquid antibodies.

(A) Cytometry evaluation: PBMCs staining with liquid (in blue) or dried (in red) antibodies cocktail.

B Comparison of % gated ILCs derived from samples stained with liquid vs. dried antibody panels



(B) Graphic comparison: Comparison of cell percentage for each subset of innate immune cells (ILCs) in liquid or dried antibody panels.

LUCID Custom Panel Design & Cocktail Services

LUCID* Custom Design Services (CDS) offers customer specific panels in a pre-mixed, unitized, ready-to-use format, reducing demonstrated sources of variability, thus streamlining your workflow while supporting your assay consistency.

Even high-throughput flow cytometry laboratories can benefit from the advantages of dry reagent cocktails in microplates without needing to adapt their workflow to tube format.¹



Move Rapidly From Data To Insight

Cytobank Platform

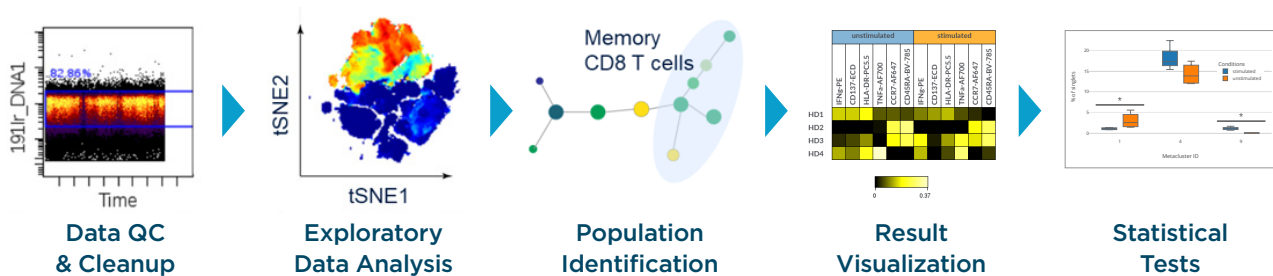
Flow cytometry has entered the era of machine learning-assisted data analysis. Cytobank software enables you to take advantage of comprehensive visualization tools and advanced analysis algorithms for single-cell data with no need for coding knowledge.

- Reduce Subjectivity
- Improve Traceability
- Ensure Reproducibility
- Boost Collaboration



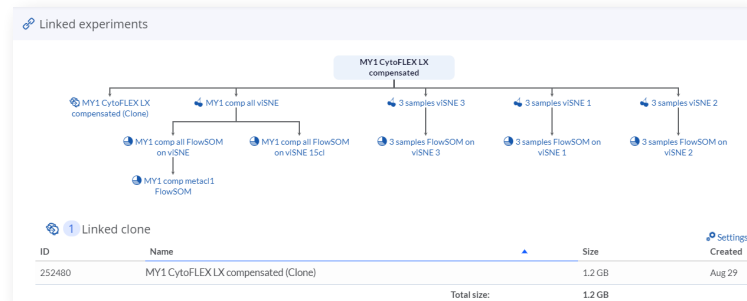
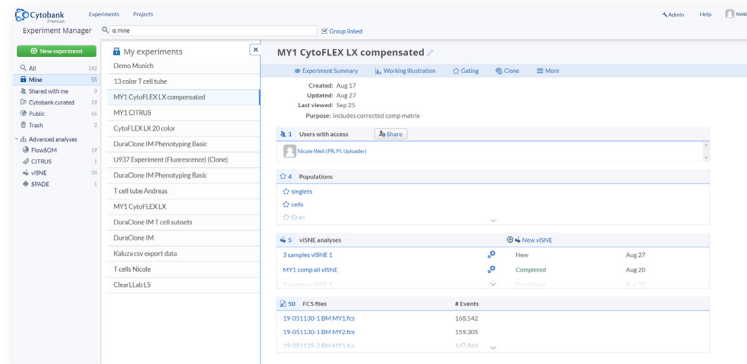
Remove repetitive steps and move quickly from raw data to statistical evaluation

The Illustration Editor supports automatic figure generation based on an experiment's scientific variables such as stimulation conditions, sample type or timepoints. These variables can be toggled on or off and rearranged dynamically to build and modify layouts and templates.



Collaborate across disciplines and geographies

Cytobank platform's cloud-based capabilities allow scientists from around the globe to collaborate and dive deeper into large and complex data sets. Share and access data anytime, anywhere from any web-enabled device.



Why work with Beckman Coulter Life Sciences?

Our application experts have surveyed the market, looked at existing workflows and integrated our solutions at customer sites around the world. Let us help you minimize your R&D requirements by leveraging our experience and our workflow solutions.

Interested in talking to someone? [Visit **beckman.com/contact-us**](https://beckman.com/contact-us).

1. LUCID services can provide tube or plate format for the dry reagents

*For research use only. Not for diagnostic purposes. All other products identified are not for use in diagnostic procedures.

**Does not include IVD kits, DURAClone B27 and DURAClone Tri-T-STAT.

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