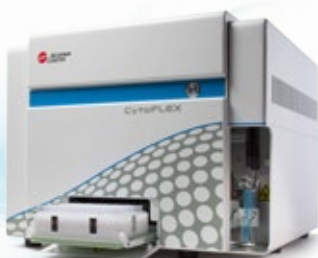




# CYTOFLEX FLOW CYTOMETER

BENCHTOP CYTOMETRY WITHOUT COMPROMISES



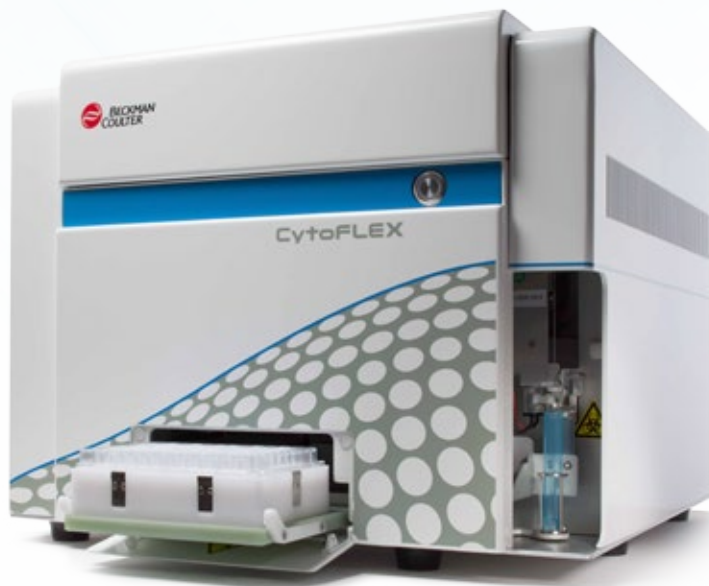
**EVERY**  
*event matters.*

 **BECKMAN  
COULTER**  
*Life Sciences*

# BENCHTOP CYTOMETRY WITHOUT COMPROMISES

The CytoFLEX Flow Cytometer has a unique flow cell design and integrated optics. The innovative Wavelength Division Multiplexing (WDM) detection module includes solid-state, high efficiency, low-noise detectors for excellent performance. The revolutionary system presents optimal excitation and emission, minimizing light loss and maximizing sensitivity. This means that you can easily detect dim populations in your sample. And all with an easy to use software interface.

At 40.6 by 40.5 by 33 cm (H by W by D) and less than 22 kg, the compact size and light weight mean that you can take the instrument where it is needed, including inside a laminar flow or biosafety hood. The CytoFLEX Flow Cytometer's superior sensitivity and resolution throughout all configurations give it the edge over other cytometry systems four times its size.



## Independent Researcher Performance Assessments

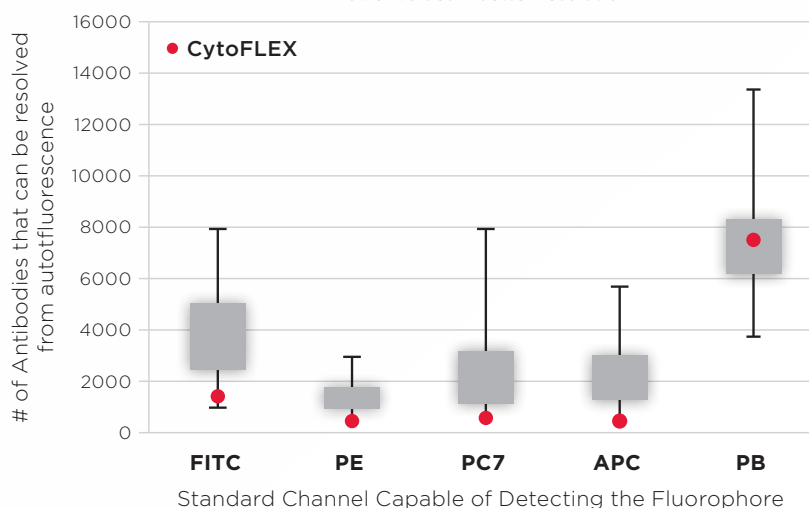
*"The CytoFLEX compares very well with all the best instruments out there. It definitely beats every instrument I own in the FITC, PE, PECy7, and APC channels."*

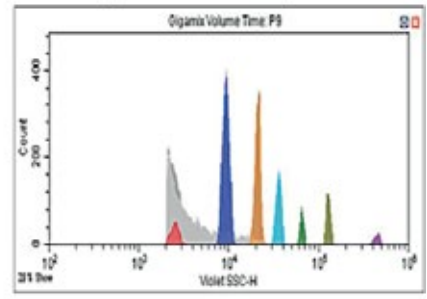
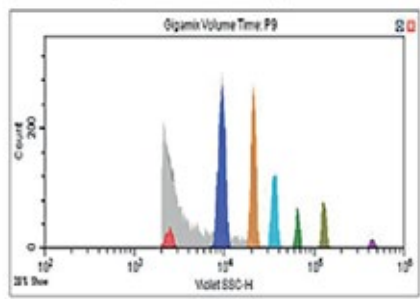
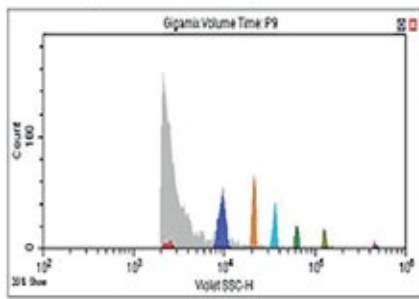
Ryan Duggan,  
UC Flow Core Lab Director

### QNORM RESOLUTION TEST

**RESULTS.** This metric measures the number of bound antibodies that can be resolved from unstained lymphocytes with lower numbers equaling better low-end resolution.

**qNORM Resolution Test**  
Lower values = better resolution





100 nm 160 nm 200 nm 240 nm 300 nm 500 nm 900 nm

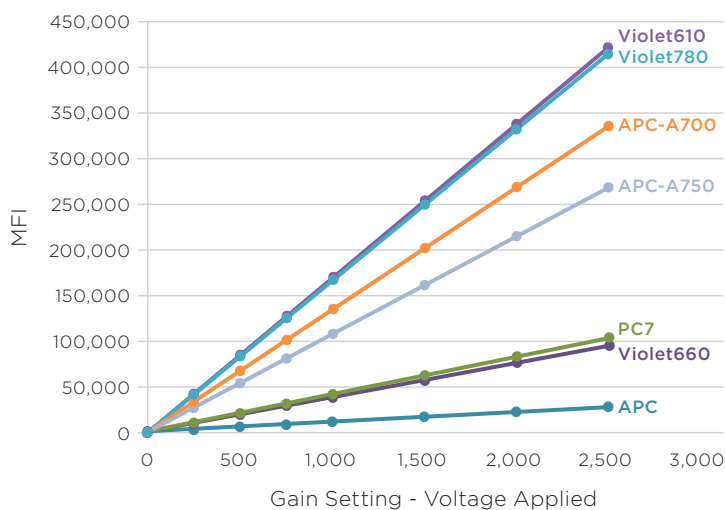
*“The CytoFLEX is the first flow cytometer with an acceptable noise range on which we can clearly demonstrate detection of extracellular vesicles down to a size of 150nm. The potential to combine small particle analysis with the detection of up to 13 additional fluorescence parameters makes this cytometer an outstanding instrument for extracellular vesicle detection.”*

Andreas Spittler, MD, Associate Professor for Pathophysiology, Medical University of Vienna, Core Facility Flow Cytometry & Department of Surgery, Research Laboratories

📞 Contact your local representative for a detailed application note: Set-Up of the CytoFLEX for Extracellular Vesicle Measurement.

**GIGAMIX BEAD ANALYSIS.** The Gigamix solution is a mixture of fluorescent Megamix-Plus SSC and Megamix-Plus FSC beads (BioCytex a Stago group company, Marseille, France) which have different sizes, 100, 160, 200, 240, 300, 500, 900 nm (red, purple, orange, blue, green, olive, and fuchsia, respectively). Beads were measured at flow rates of 10, 60 and 120 µl/min. The population of the 100 nm beads is very small and within the range of noise. Increasing the flow rate makes the 100 nm beads more visible. The visibility of all other peaks was also improved indicating that by increasing the flow rate the background noise is not also increased.

### Linearity – “Dimly-Responsive” Channels



### LINEARITY OF DIMLY RESPONSIVE CHANNELS.

Using 8-peak beads, the third brightest peak's median intensity was measured at every gain and plotted versus MFI.

*“Linearity is certainly a great asset of the CytoFLEX. It is truly impressive as all the channels displayed an almost perfect linearity. The minimum R-squared value achieved was 0.9998 which is exceptional.”*

Loïc Tauzin, Valerie Glutz and Miguel Garcia, Ecole Polytechnique Federale De Lausanne Flow Cytometry Core Facility



## Laser and Fluorescent Channel Choices

The system can be fully configured with up to three lasers and 13 fluorescent channels for 15 analysis parameters or purchased as a one laser 4 color system and upgraded later as needed.

### Optimal Performance upon Installation

The advanced optical system is alignment free. The laser delays are automatically adjusted by the daily QC system, if required.

- Provides 7 decades of tunable dynamic range
- <30 MESF FITC
- <10 MESF PE
- 200nm particle detection



Excitation	Fluorescence Channels	Fluorochromes	
488nm	525/40 BP	FITC, Alexa Fluor 488, CFSE, Fluo-3	
	585/42 BP	PE, PI	
	610/20 BP	ECD, PE-Texas Red, PE-CF594, PI	
	690/50 BP	PC5, PC5.5, PerCP, PerCP-Cy5.5, PI	
	780/60 BP	PC7	
638nm	660/20 BP	APC, Alexa Fluor 647, eFluor 660	
	712/25 BP	APC-Alexa Fluor 700, Alexa Fluor 700	
	780/60 BP	APC-Alexa Fluor 750, APC-Cy7, APC-H7, APC-eFluor 780	
405nm	450/45 BP	Pacific Blue, V450, eFluor 450, BV421	
	525/40 BP	Krome Orange, AmCyan, V500, BV510	
	610/20 BP	Violet610, BV605, Qdot 605	
	660/20 BP	Violet660, BV650, Qdot 655	
	780/60 BP	Violet780, BV785, Qdot 800	



# Conserve Precious Samples and Maximize Data Collected

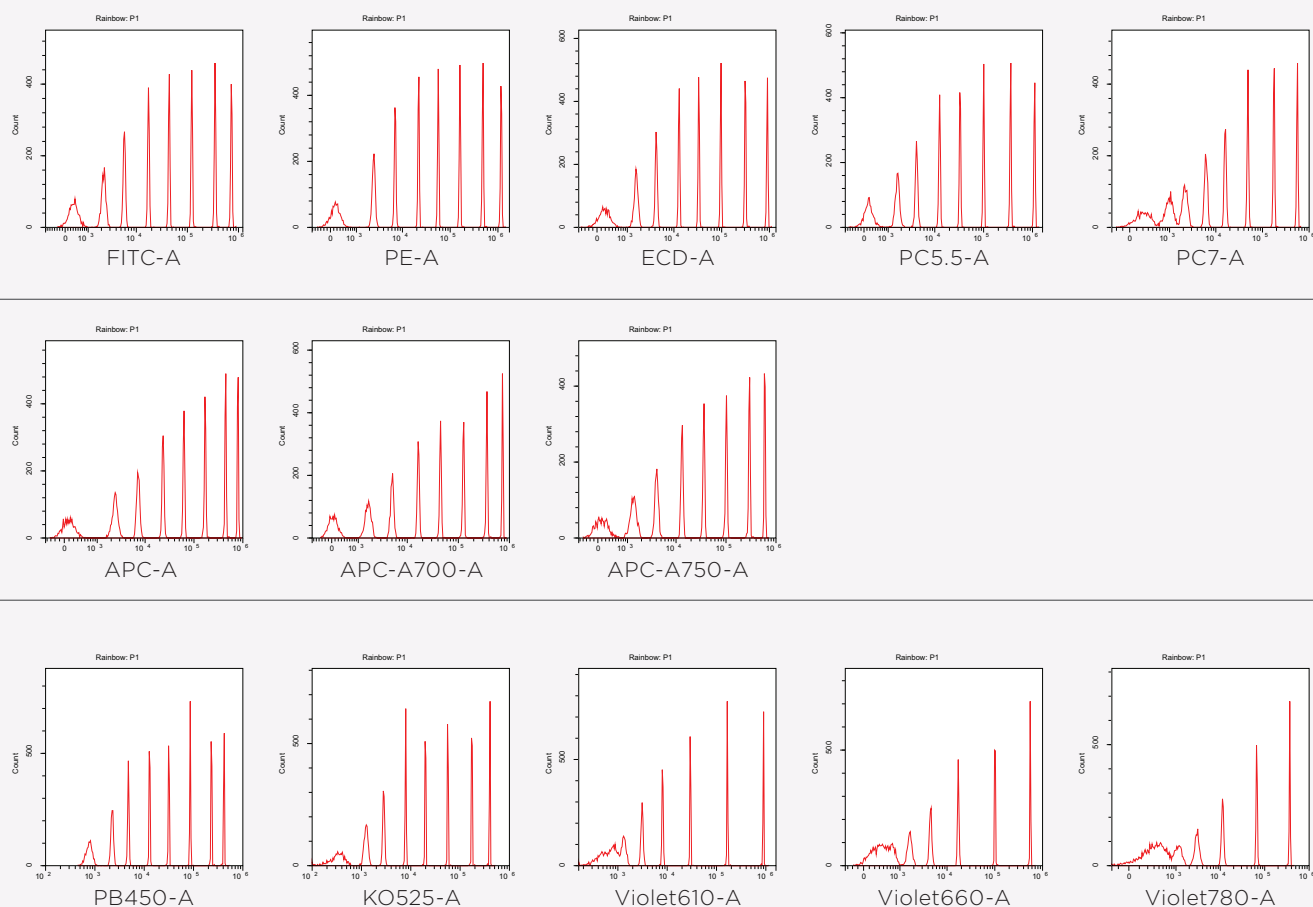
Use sample volumes as low as 10  $\mu$ L. User adjustable flow rate from 10-240  $\mu$ L/minute, selectable at three increments. Detect up to 30,000 events per second with 15 parameters.

**For higher throughput applications, an optional plate loader module can save hands on time.**

- CytoFLEX Plate Loader option can analyze a 96-well plate in as little as 32 minutes.
- Switch between single tube and plate acquisition in 5 minutes.
- Easy virtual plate layout setup with customizable wash and mix cycles
- Define multiple experiments on a single plate
- Compatible with flat-bottom, U- and V-bottom standard plates



## Rainbow 8-peak Bead Data



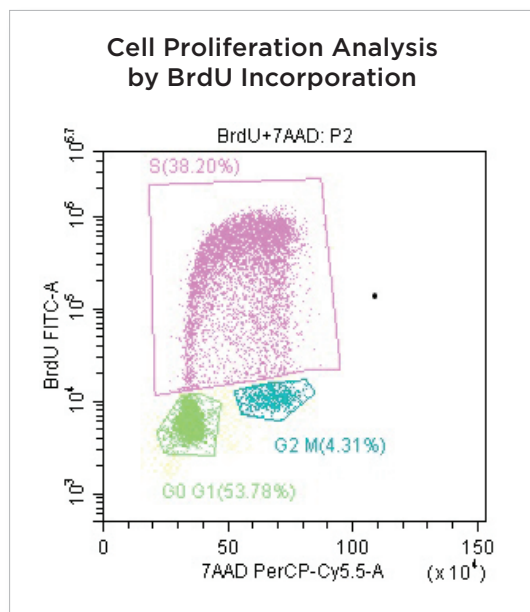
Exceptional instrument sensitivity: baseline resolution of all peaks even in violet and far red channels detectors using SPHERO™ Rainbow 8-peak beads.

# FOCUS ON THE SCIENCE

The CytoFLEX Flow Cytometer provides the performance you need in an easy to use system allowing you to focus on the science, not the instrumentation. The system can be configured for the needs of your laboratory, whether it is routine low complexity analysis, high complexity analysis, or analysis that pushes the boundaries for flow cytometry.

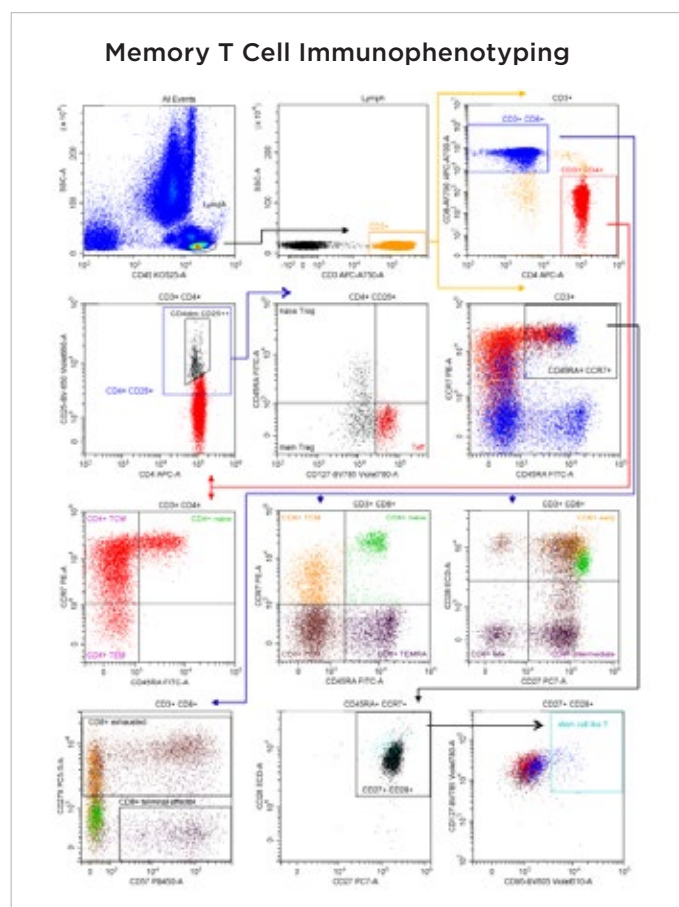
## CELL PROLIFERATION ANALYSIS.

Combining BrdU incorporation to assess actively proliferating cells and 7-AAD to measure the proportion of live cells is an effective combination for assessing key population characteristics. The CytoFLEX Flow Cytometer is ideal for these routine analyses.



Cell Cycle Analysis of proliferating human peripheral blood mononuclear cells by BrdU incorporation and 7-AAD staining.

**T CELL SUBSET ANALYSIS.** The complexity of heterogeneous cell population analysis continues to increase as more markers are needed to differentiate functional cell sub populations. With up to 13 channels for fluorescent detection, the CytoFLEX Flow Cytometer has the capabilities needed to meet the increased immunophenotyping demands.

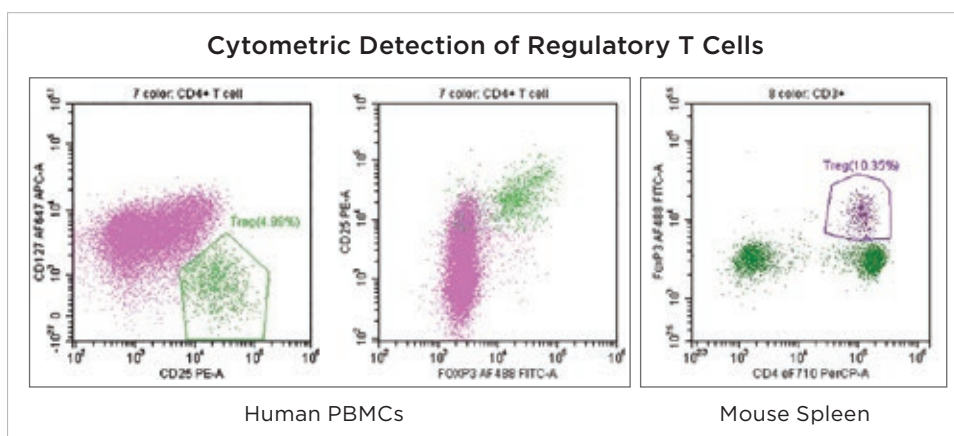


Analyses of T cell subsets based on the differential expression of surface molecules related to cell function, differentiation, or activation have evolved. As a result, T cell analysis requires a multitude of markers to capture the various populations. Combining the CytoFLEX Flow Cytometer with the 13 color DuraClone tube presented here, allows for the identification of most T cell memory subpopulations discriminated by surface expression makers.

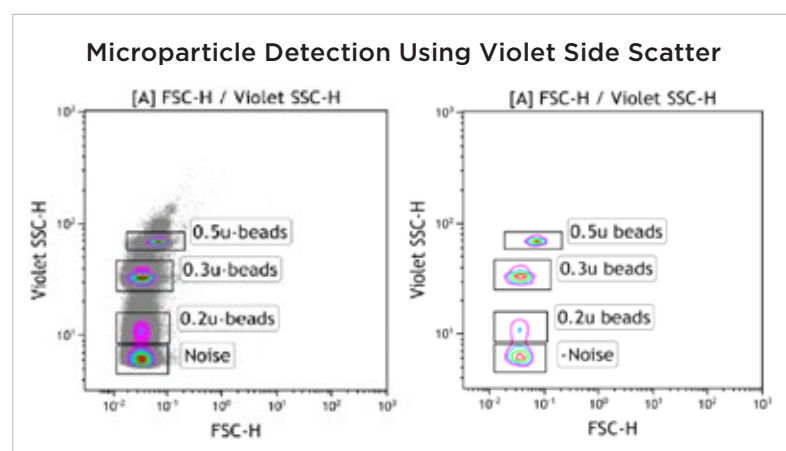
 Application note available for experimental details

## OPTIMAL RESOLUTION FOR LOW EXPRESSED ANTIGENS.

Low expressed antigens and low abundance cell types are pushing the boundaries of flow cytometry. The CytoFLEX Flow Cytometer has the sensitivity and resolution capabilities to identify populations with these characteristics.



Regulatory T cells characterized by low levels of expression were easily identified.



Bead based small particles were detected using forward scatter and VSSC. Data provided by Dr. Huang Yijun, Sun Yat-Sen University, School of Medicine, Guangzhou, China.

*Application note available on optimal nanoparticle detection*

## MICROPARTICLE DETECTION.

The boundaries for flow cytometry are also being pushed by the need to measure and evaluate characteristics of smaller particles. Several fundamental capabilities of flow cytometry make this an attractive platform for extracellular vesicles, ability to detect large numbers of events, and discriminate rare events, while collecting information on phenotypic expression. The CytoFLEX Flow Cytometer has the resolution to detect particles down to 200 nm while also collecting information in the fluorescent channels.

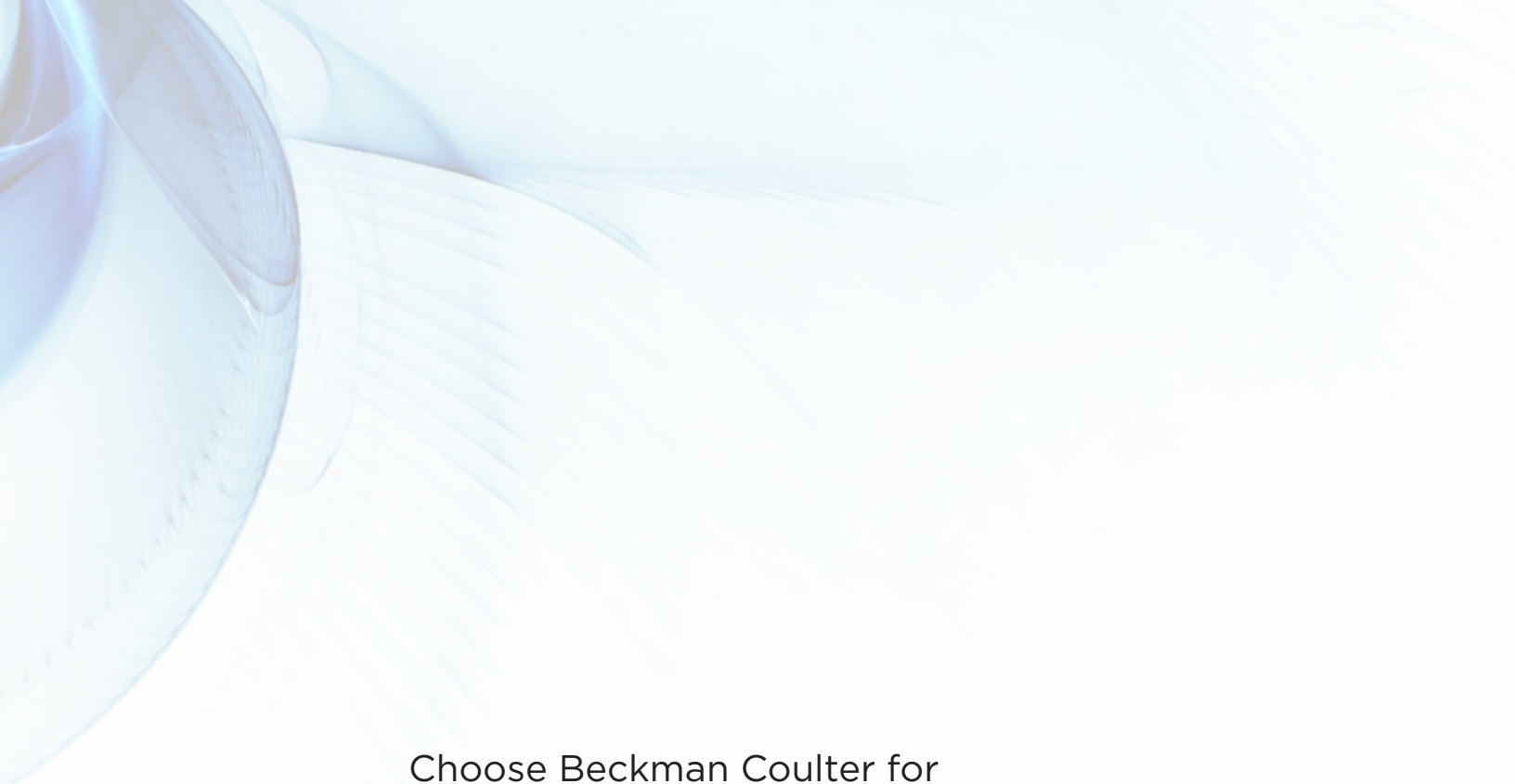
## CytExpert Acquisition and Analysis Software

Novice to experienced cytometrists can not only learn and operate the system quickly but can confidently set up experiment based protocols and export publication quality data. Includes some innovations to make flow cytometry data collection easier than ever:

**Compensation Library:** Store a repository of compensation spillover values of dyes in a library to easily determine the correct compensation matrix with new gain settings.

**Auto Threshold:** Easily find target population. No need to worry about the threshold setting while adjusting gains when this function is enabled.

**Axis Pan:** An ideal tool for visualization across a high dynamic range axis. You can easily pan across the axis range to search if there is important data out of range. A tool for “gold panning”



## Choose Beckman Coulter for Benchmark Expertise and Innovation

For over 80 years Beckman Coulter has driven innovation. We remain committed to shaping flow cytometry technology to fit seamlessly into your lab's workflow and to provide an optimal user experience. When you choose a Beckman Coulter instrument you receive the highest level of expertise, innovation, and quality assurance.

Contact your local Beckman Coulter sales representative.

[beckmancoulter.com](http://beckmancoulter.com)



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