

Quantitative Cytometry

Tools for Expression Analysis



BEADS • ABOVE THE REST



Standardize measurements to ensure accurate and comparable results.

Applications

Fluorescence cytometry is an important tool for investigations in cell and molecular biology. This technology is routinely used for immunophenotyping and an expansive array of research applications, such as the study of protein phosphorylation and the determination of telomere length.

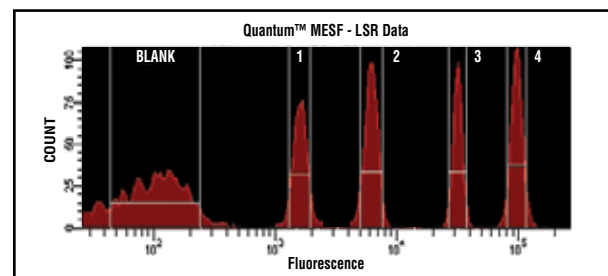
Although fluorescence cytometry has proven to be a very powerful and versatile technology, it is not without limitations. Notably, without a standardized measure of fluorescence intensity, results of analyses can be described only in relative terms, such as negative/positive, dim/intermediate/bright, or in arbitrary fluorescence intensity units. The interpretation of fluorescence intensity measurements can be further complicated by factors such as daily instrument variation, differences in hardware (laser power, filter sets), PMT voltages, software, environmental factors such as buffer pH, and fluorochrome labeling density of antibodies (F/P ratio).

Tools for Quantitation

Bangs' tools for quantitative flow cytometry provide the means to standardize fluorescence intensity measurements, thereby permitting truly quantitative analyses. Our products include **Quantum™ MESF** (Molecules of Equivalent Soluble Fluorochrome) and **Quantum™ Simply Cellular®** (ABC, Antibody Binding Capacity) kits. Fluorochrome-labeled microspheres are used to generate a standard curve relating fluorescence intensity to standardized MESF or ABC values from Quantum™ MESF or Quantum™ Simply Cellular® beads. The MESF or ABC values of labeled cell samples may be determined by measuring their fluorescence intensities, and "reading" the corresponding MESF or ABC values from the standard curve using the QuickCal® analysis template that is provided with the kit.

Bangs' Quantum™ kits are uniquely qualified for applications in quantitative fluorescence cytometry:

- Precise MESF or ABC values are assigned to bead populations through meticulous primary calibrations.
- MESF and ABC values provide standardized units of fluorescence intensity. The MESF unit has been formally adopted by NIST and NCCLS as a standardized measure of fluorescence intensity.
- Quantum™ microspheres are labeled with the actual fluorochromes used in flow cytometry, ensuring that quantitative assignments are truly relevant.
- Surface-labeled microspheres are environmentally-responsive: the fluorochrome on the bead responds to the buffer (pH, ionic strength) in the same manner as the fluorochrome on the labeled cell. The fluorescence intensity of beads thus mirrors that of cells, preserving the calibration when quantitative assignments are made.



Quantum™ MESF LSRII data

Procedure

1. Run Quantum™ MESF or Quantum™ Simply Cellular® microspheres on the same day, same instrument, and at the same instrument settings (PMT and compensation) as labeled cell samples.
2. Gate on each peak within the fluorescence histogram.
3. Enter the median channel value of each fluorescence peak against its calibrated MESF or ABC value that appears within the QuickCal® analysis template. A calibration curve will be drawn automatically.
4. Enter median channel values of labeled samples for the assignment of MESF or ABC values.

QUANTITATION

Cat. # Product Description

488	Quantum™ Alexa Fluor® 488 MESF
647	Quantum™ Alexa Fluor® 647 MESF
823	Quantum™ APC MESF
822	Quantum™ Cy™5 MESF
555	Quantum™ FITC-5 MESF
555p	Quantum™ FITC-5 MESF (Premix)
828	Quantum™ PE-Cy™5 MESF
827	Quantum™ R-PE MESF
815	Quantum™ Simply Cellular® anti-Mouse IgG
816	Quantum™ Simply Cellular® anti-Human IgG
817	Quantum™ Simply Cellular® anti-Rat IgG

Alexa Fluor® is a registered trademark of Life Technologies Corporation.

Cy™, including Cy5, is a trademark of GE Healthcare Limited. These products are manufactured under license from Carnegie Mellon University under U.S. Patent Number 5,268,486 and related patents.

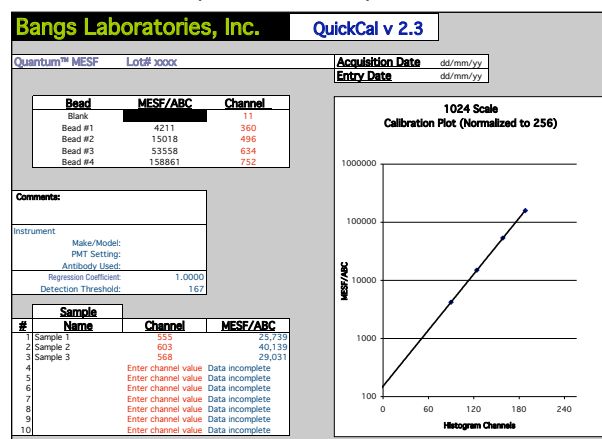
Quantum™, QuickCal®, and Simply Cellular® are trademarks or registered trademarks of Bangs Laboratories, Inc.

QUICKCAL® v. 2.3 DATA ANALYSIS PROGRAM

What is QuickCal?

QuickCal v. 2.3 utilizes pre-programmed spreadsheet templates to generate standard curves from your Quantum™ MESF kits or Quantum™ Simply Cellular® kits and to calculate sample MESF or ABC values.

Access the FREE QuickCal v. 2.3 quantitative analysis program by logging into our website at www.bangslabs.com/products/quickcal and entering the Access Number provided with your standards.



QuickCal® performs regression analysis to analyze instrument performance and make MESF assignments to stained samples.

Bangs Laboratories supplies a large variety of uniform polymeric, silica, and magnetic microsphere products setting the standards for diagnostic, research, and flow cytometry applications. No matter the project, we have a product that serves or we'll work to custom-design a solution to fit. And that's not the half of it.

We also stand behind our products. Regardless of the size of your question or the size of your company, we offer tech support, absolutely free.

Sound interesting? Give us a call.

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