Quantitative Fluorescence Cytometry

Tools for Expression Analysis, 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.

Though fluorescence cytometry is an extremely powerful and versatile technology, it's 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

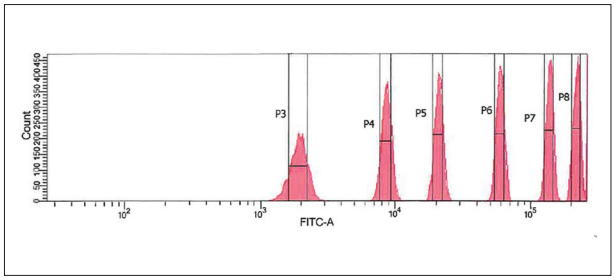
Bangs' Quantum™ kits for quantitative flow cytometry provide the means to standardize fluorescence intensity measurements and conduct quantitative analyses. Fluorochrome-labeled microspheres are used to generate a standard curve relating fluorescence intensity to standardized MESF or ABC values from Quantum™ beads. The standardized MESF or ABC values of labeled cell samples are then determined by measuring their fluorescence intensities, and assigning 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.

Procedure

1. Run QMESF or QSC 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.

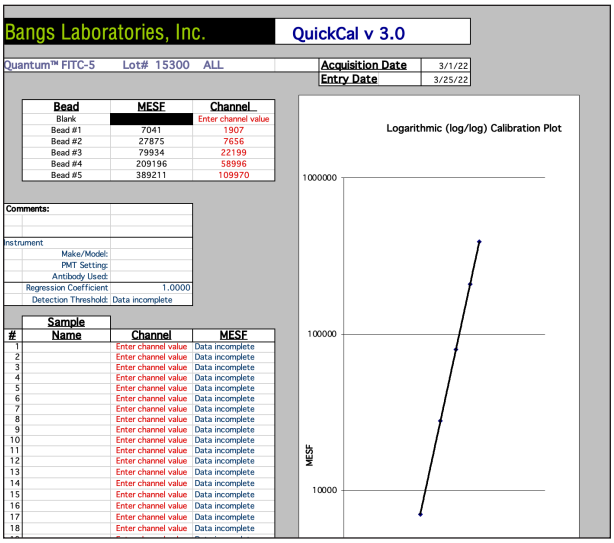


QUICKCAL® v. 3.0 Data Analysis Program

QuickCal is a pre-formatted template used to calculate MESF or ABC values of stained samples that have been run against Quantum™ MESF or Quantum™ Simply Cellular® kits. standard curves from your Quantum™ MESF or Quantum™ Simply Cellular® kits and to calculate sample MESF or ABC values.

Obtain a template by logging into the QuickCal portion of BangsLabs.com and entering the Access Number provided with your MESF kit.

Scan QR Code to instantly access your Bangs QuickCal® v. 3.0



The QuickCal® regression template is used to make MESF assignments to stained samples.

QUANTUM MESF KIT (QMESF)

LABELING: Pre-stained w/fluorophore

UNIT: **M**olecules of
Equivalent
Soluble
Fluorochrome
(**MESF**)

QUANTUM SIMPLY CELLULAR KIT (QSC)

LABELING: User stains w/ fluor-labeled Abs

UNIT: **A**ntibody
Binding
Capacity
(**ABC**)

ORDERING INFORMATION

Cat. #	Description
488	Quantum™ Alexa Fluor® 488 MESF Kit
647	Quantum™ Alexa Fluor® 647 MESF Kit
823	Quantum™ APC MESF Kit
555	Quantum™ FITC-5 MESF Kit
555p	Quantum™ FITC-5 MESF Kit (Premix)
827	Quantum™ R-PE MESF Kit
815	Quantum™ Simply Cellular® anti-Mouse IgG
816	Quantum™ Simply Cellular® anti-Human IgG
817	Quantum™ Simply Cellular® anti-Rat IgG

LET'S CONNECT —

info@bangslabs.com 800.387.0672

BangsLabs.com