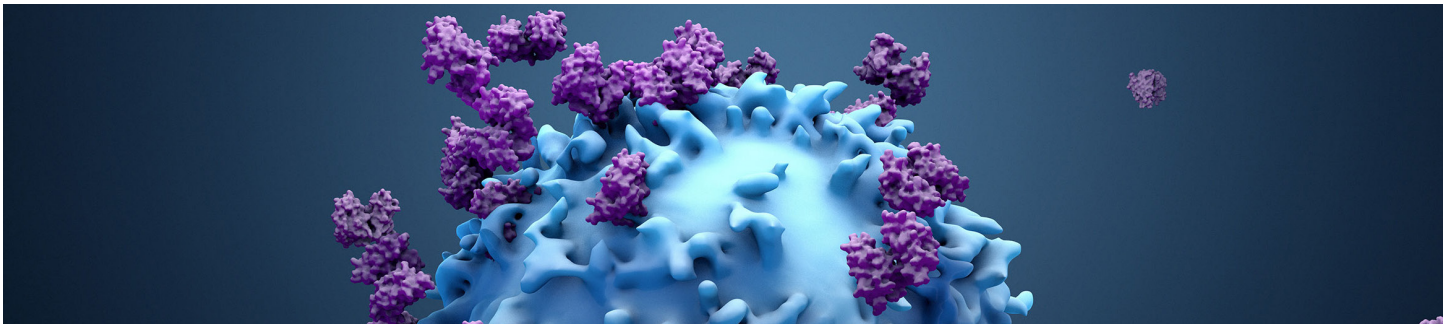
Flow, Mass Cytometry

Enjoy this curated listing of references related to standardization in mass cytometry



Flow Cytometry has proven itself as a valuable tool for assessing cellular processes; however, the advent of mass cytometry or mass cytometry by Time-Of-Flight (CyTOF®) allows investigators to expand their analyses, and to study full cell signalling pathways. Traditional conjugated antibody fluorophores used in flow cytometry have limited capability compared to the metal particle conjugated antibodies employed by mass cytometry. Flow cytometry can quantify 18 proteins per cell, at>10000cells/s; comparatively, mass cytometry can potentially extend these capabilities significantly. Immunophenotyping by mass spectrometry provides the ability to measure > 36 proteins at a rate of 1000cells/s (Bendall *et al).* While mass cytometry offers some expanded capabilities it does come with some trade-offs compared to traditional flow cytometry.

Advantages of mass cytometry relative to Fluorescence Cytometry

- Greater number of parameters per event
- Higher sensitivity
- Little compensation required
- No "spreading" or error from fluorophores

Limitations of mass cytometry relative to Fluorescence Cytometry

- Higher operating / reagent cost
- Limited conjugates available
- Cannot sort

Bangs Laboratories does not currently manufacture standards expressly for mass cytometry; however, investigators have utilized our Quantum Simply Cellular beads (labeling with metal-tagged Abs) or, in general, lanthanide chelate (e.g. europium chelate) beads as instrument and assay standards.

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