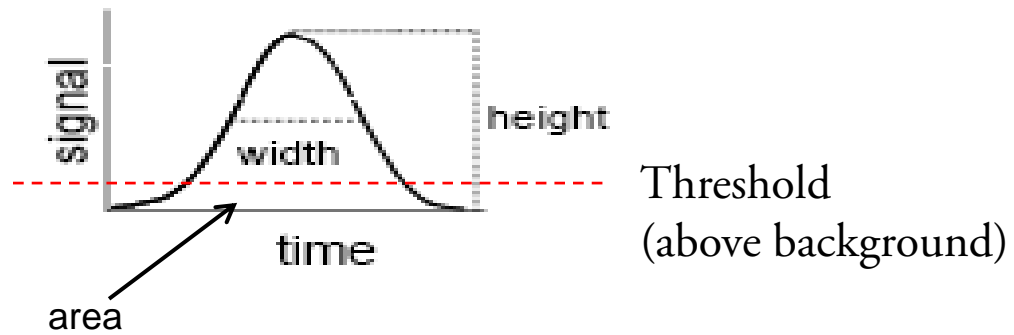
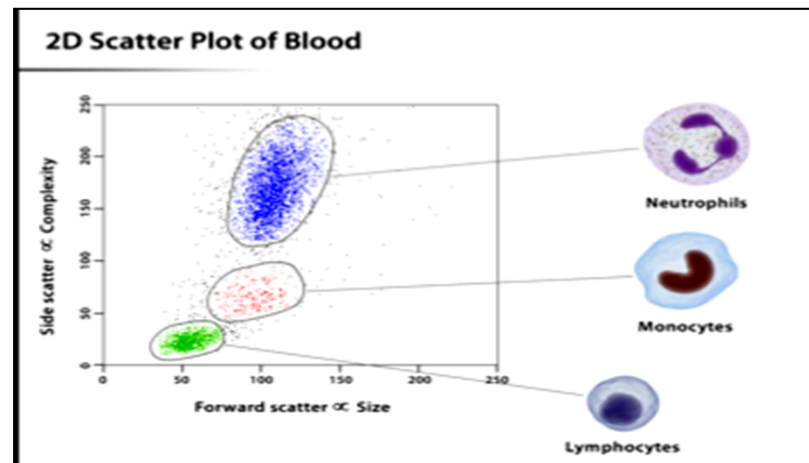


What Can Be Measured with a Flow Cytometer

Events

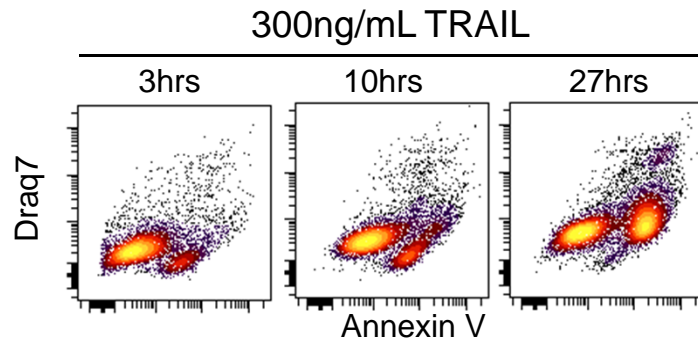


2D scatter plot of FSC vs SSC

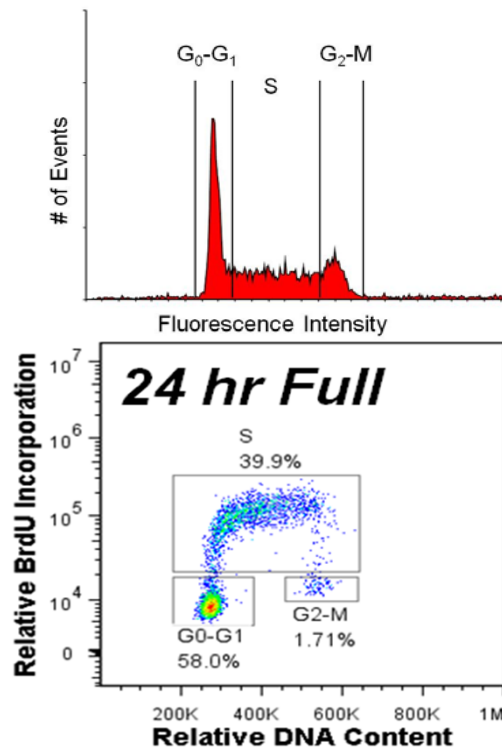


Viability and Apoptosis

- Many fluorescent dyes are cell impermeant unless the membrane is compromised
 - E.g. propidium iodide, Draq7
- This allows detection of viability
- That can be combined with fluorophore-labeled Annexin-V
 - binds to exposed phosphatidylserine, a marker of apoptosis

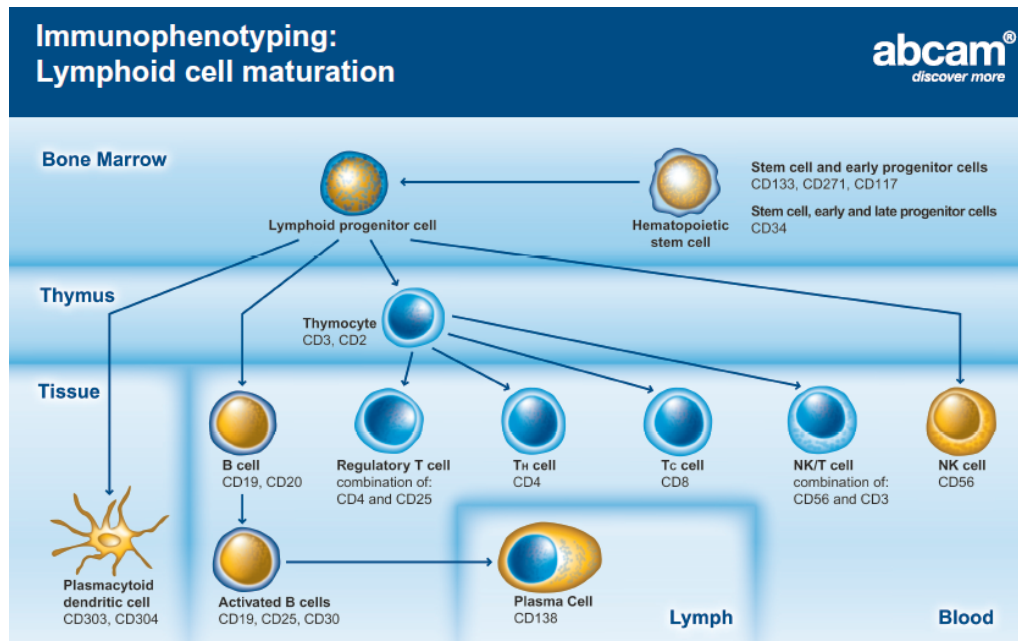


Cell Cycle Analysis



- There are many fluorescent dyes that can stoichiometrically bind to DNA
 - E.g. propidium iodide
- DNA dyes can be combined with BrdU staining to separate cells actively replicating their DNA
 - A pulse of BrdU gets incorporated into the DNA, which can then be recognized by an antibody

Immunophenotyping



http://docs.abcam.com/pdf/immunology/lymphoid_cell.pdf

- One can stain cells with labeled antibodies against lineage-specific extracellular markers

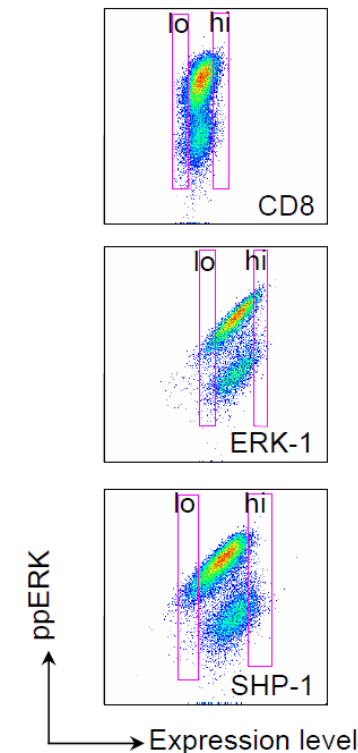
Intracellular Immunostaining

SCIENCE VOL 321 22 AUGUST 2008

Variability and Robustness in T Cell Activation from Regulated Heterogeneity in Protein Levels

Ofer Feinerman,^{1*} Joël Veiga,^{1*} Jeffrey R. Dorfman,^{1†}
Ronald N. Germain,² Grégoire Altan-Bonnet^{1‡}

- After cell fixation, one can detect intracellular epitopes
- E.g. panels of phosphorylated proteins



Fluorescent Cell Barcoding (FCB) for Multiplex Flow Cytometry

