Flow Cytometry

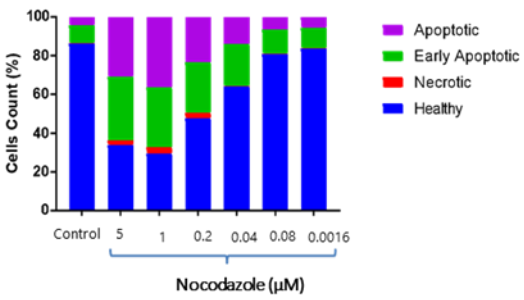
High speed, quantitative, high content analysis for different stages of drug discovery

Principle

- Cells are passed through a focused laser beam to produce optical signals including light scattering and fluorescence. Thousands of cells are analysed rapidly generating statistically robust data
- Able to measure multiple parameters simultaneously
- Light scattering allows dead cell discrimination thus reducing false positives.
- 488nm laser can excite in green, yellow and red spectral regions. A range of compatible fluorochromes includes - FITC, Alexa 488, R-Phycoerythrin (PE), PE-TexasRed, PerCp, Propidium Iodide, 7-AAD.
- The speed and sensitivity of flow cytometry therefore makes it ideally suited to the analysis of minor cellular populations

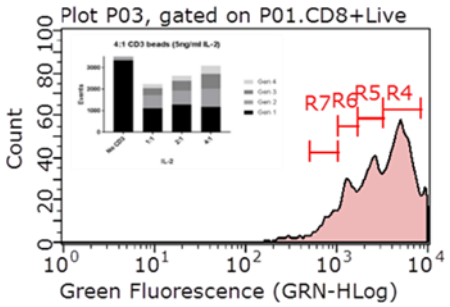
Applications:

Apoptosis



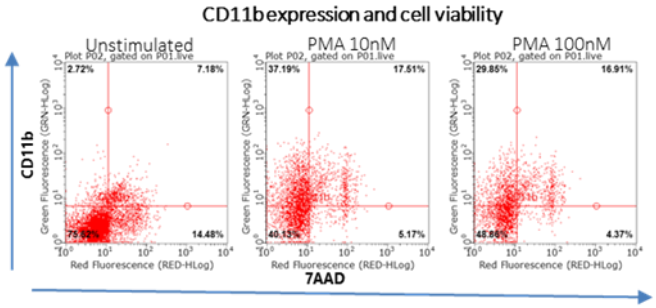
THP-1 cells stained for Annexin V and 7-AAD following Nocodazole treatment (24hrs). Expression of Annexin V Is an early marker of apoptosis. 7-AAD stains the nuclei of cells when membrane integrity is impaired (necrotic)

Proliferation CFSE staining



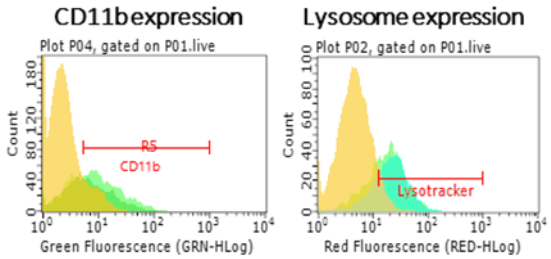
Human T cells stained with CFSE following IL-2/CD3-CD28 exhaustion. Each peak represents a cell division – fluorescent intensity is reduced for each cell division

Surface marker staining



HL-60 cells were stained for CD11b and 7-AAD following PMA stimulation to induce differentiation to a macrophage phenotype. Increased CD11b expression is seen with PMA treatment.

LysoTracker™ staining



THP-1 cells were stained for CD11b and lysosome expression using LysoTracker™ following PMA stimulation. Increased lysozyme expression is seen with PMA treatment.

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