Technology that counts

chemometec

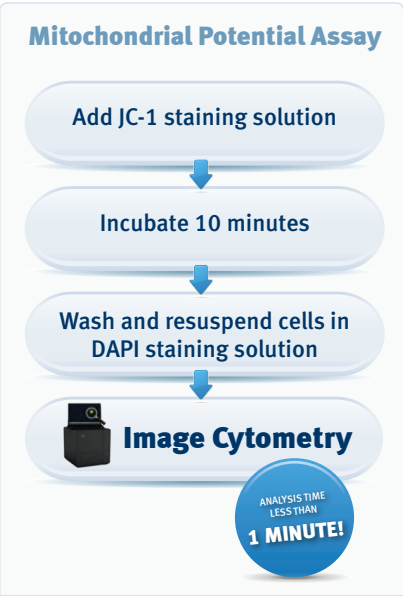
NC-3000™ Mitochondrial Potential Assay

– For easy measurement of changes in the mitochondrial membrane potential

Loss of the mitochondrial membrane potential is known to precede apoptosis and chemical-hypoxia-induced necrosis. The lipophilic cationic dye, JC-1, display potential-dependent accumulation in the mitochondria and provides a simple, fluorescent-based method for distinguishing between healthy and apoptotic cells.

In healthy cells, the negative charge established by the intact mitochondrial membrane potential facilitates the accumulation of JC-1 in the mitochondrial matrix.

At high concentrations JC-1 forms aggregates and become red fluorescent. In apoptotic cells the mitochondrial potential collapses and JC-1 localizes to the cytosol in its monomeric green fluorescent form.



Key Benefits

of the NC-3000™ Mitochondrial Potential Assay

Analysis time less than one minute!

- ✓ Easy discrimination between polarized (healthy) cells, depolarized (apoptotic) cells and necrotic/late apoptotic cells
- ✓ Fast automated single cell analysis
- ✓ Acquisition and analysis in a simple step
- ✓ Standardized results – even with different users
- ✓ No calibration required
- ✓ PlotManager for superior data presentation
- ✓ Automated PDF reports
- ✓ Export of data in FCS/ACS formats

The NucleoCounter® NC-3000™

- Next generation cell analysis

FIXED ASSAYS | HIGH SPEED CELL COUNT | FAST ANALYSIS | VISUAL INSPECTION | NO RINSING | NO CLOGGING | NO CALIBRATION | NO MAINTENANCE | LEARN MORE

Viability and Cell Count | Cell Cycle Assays | Caspase 3/7, 8 & 9 | Annexin V | Mitochondrial Potential | Cell Vitality | DNA Fragmentation | GFP Transfection Efficiency | FlexiCyte™ (user adaptable protocols)

Principle: NC-3000™ Mitochondrial Potential Assay

Using fluorescence microscopy and image analysis, the NucleoCounter® NC-3000™ system automates detection of cells with collapsed mitochondrial membrane potential. Cells are stained with JC-1 and DAPI.

Cellular JC-1 monomers and aggregates are detected as green and red fluorescence, respectively. Mitochondrial depolarization is revealed as a decrease in the red/green fluorescence intensity ratio. Necrotic and late apoptotic cells are detected as blue fluorescent (DAPI) cells.

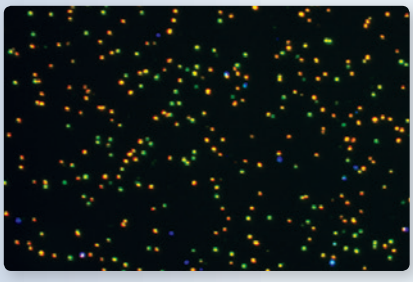
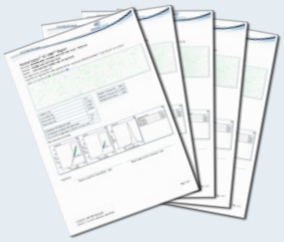


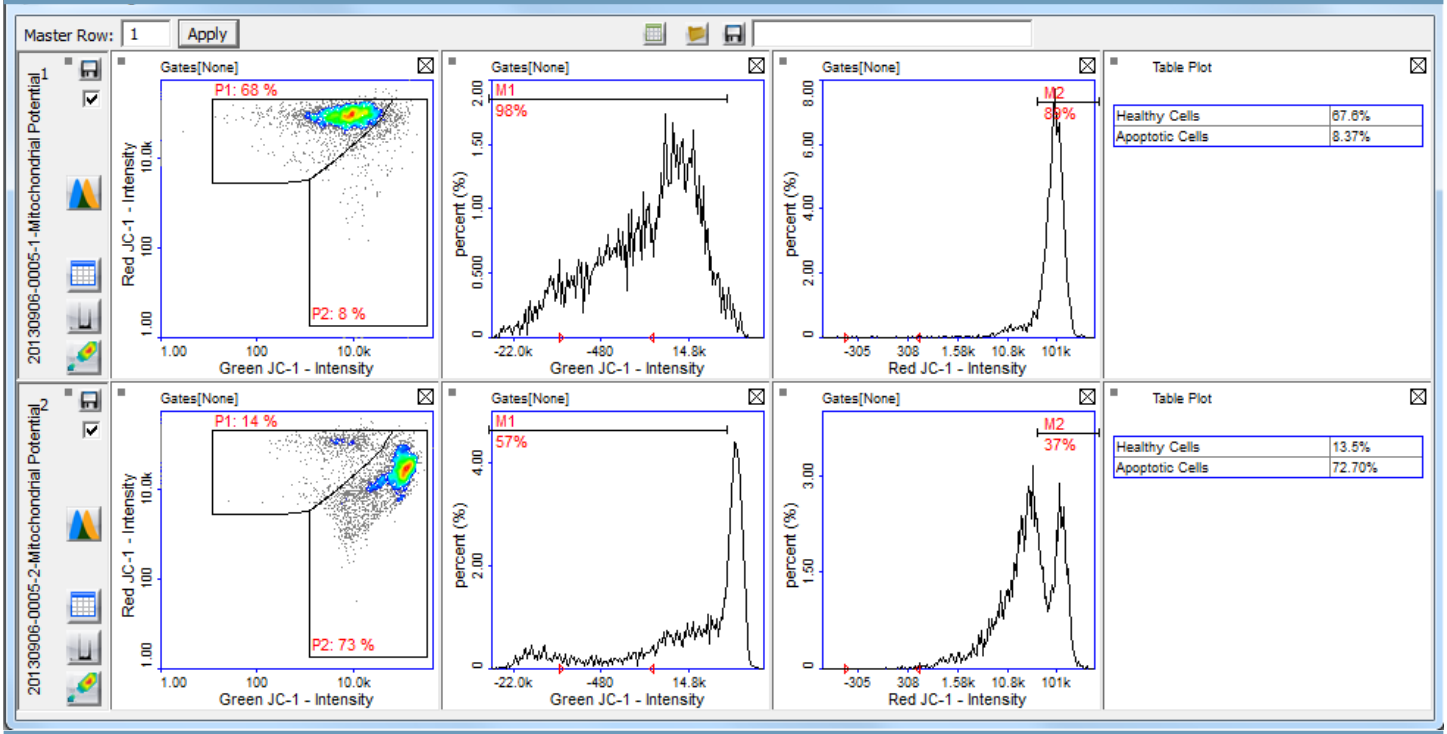
Image acquired with the NucleoCounter® NC-3000™ for the Mitochondrial Potential Assay



Automated PDF reports

The NucleoCounter® NC-3000™
- Next generation cell analysis

Results: Presented in PlotManager



Jurkat cells were grown in the absence (upper row) or in the presence (lower row) of camptothecin (CPT). Cells were stained with JC-1 and DAPI and analysed using the Mitochondrial Potential Assay and a NucleoCounter® NC-3000™. Scatter plots and histograms were obtained from the NucleoView™ NC-3000 software. Polygons and markers in the displayed plots were used to demarcate the various cell populations. In this example untreated cells are 9% depolarized/apoptotic whereas CPT-treated cells are 61% depolarized/apoptotic.

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For more information, please visit **www.chemometec.com/NC-3000**

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