TREVIGEN® Product Data

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Valinomycin

Catalog#: 6305-100-02 **Size:** 100 µl

Description: Cellular energy produced during mitochondrial respiration is stored as an electrochemical gradient across the mitochondrial membrane. This accumulation of energy in healthy cells creates a mitochondrial transmembrane potential, called delta-psi or $\Delta\Psi_m$ that enables the cell to drive the synthesis of ATP. Disruption of $\Delta\Psi_m$ has been shown to be one of the first intracellular changes following the onset of apoptosis. Valinomycin is a potassium ionophore that is known to disrupt the mitochondrial potential leading to apoptosis through cytoplasmic acidification, caspase activation and DNA fragmentation.

Molecular Weight: 1111.32.

Physical State: Valinomycin is provided in DMSO. The final reagent concentration is 1 mM.

Storage: Store at 4°C, shielded from light and with desiccant. For extended storage, freeze in working aliquots in a manual defrost freezer to avoid repeated freeze-thaws.

Applications: Valinomycin is used as an apoptosis inducer and to induce mitochondrial potential ($\Delta\Psi_m$) disruption. The concentration employed and length of treatment are cell type dependant and require optimization. Please refer to MSDS before handling this product.

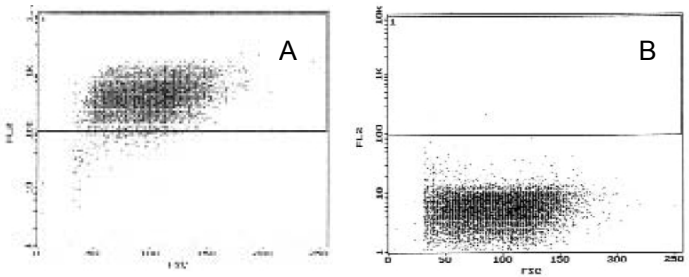

Fig. 1. Healthy WEHI 7.1 mouse lymphocytes (panel A) and cells treated with 100 nM valinomycin (panel B) were analyzed by flow cytometry. A distinct shift in the fluorescence occurs when the mitochondrial potential is disturbed in the apoptotic cells.

References:

1. Ehrenberg, B., V. Montana, M.D. Wei, J. P. Wuskell and L.M. Loew. 1988 Membrane potential can be determined in individual cells from the Nernstian distribution of cationic dyes. Biophysical Journal **53**:785-794.
2. Rottenberg, H. , S. Wu. 1998. Quantitative assay by flow cytometry of the mitochondrial membrane potential in intact cells. Biochim Biophys Acta.**1404**:393-404.

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Valinomycin
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