

Ionomycin (free acid)

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MESGEN
INNOVATION BIOTECHNOLOGY

Catalog Number : MG6613

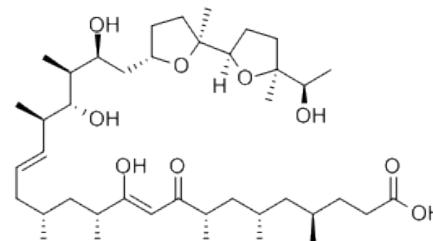
CAS : 56092-81-0

Packaging Size : 14.1 mM*100 μ L in Ethanol

Molecular Weight : 709.01

Molecular Formula : C₄₁H₇₂O₉

Purity: >98.0%



Description

Ionomycin is more effective than A23187 as a Ca⁺⁺-ionophore. Ionomycin is used in research on Ca⁺⁺ transport across biological membranes; Ionomycin induces apoptotic degeneration of embryonic cortical neurons.

Highly specific for divalent cations (Ca²⁺ > Mg²⁺ >> Sr²⁺ = Ba²⁺). More effective than antibiotic A23187 as a mobile ion carrier for Ca²⁺. Complexes with Ca²⁺ between pH 7 and 9.5, causing significant absorption in the UV range; however, in contrast to A23187, it is not fluorescent. Useful for studies of Ca²⁺ transport across biological membranes and measurement of cytoplasmic free Ca²⁺. Induces apoptotic neuronal degeneration in embryonic cortical neurons. Also induces cell cycle arrest in the G1 interval of mature Burkitt lymphoma cell lines.

Highly specific for divalent cations and more effective than A23187 as a mobile ion carrier for Ca²⁺. Complexes with Ca²⁺ between pH 7 and 9.5. In contrast to A23187, it is not fluorescent. Useful for studies of Ca²⁺ transport across biological membranes and measurement of cytoplasmic free Ca²⁺. Induces apoptotic neuronal degeneration in embryonic cortical neurons and cell cycle arrest in the G1 phase in mature Burkitt lymphoma cell lines.

In Vitro

Ionomycin (SQ23377) is a Calcium ionophore and an antibiotic produced by *Streptomyces conglobatus* ATCC 31005. It is observed that LCLC 103H cells overexpressing the catalytic subunit of μ -calpain rapidly underwent cell death after treatment with ionomycin. The first signs of Ionomycin (SQ23377)-induced cell death are detected 3 h after addition of the ionophore. Addition of 2 μ M Ionomycin (SQ23377) to LCLC 103H cells causes an instantaneous increase in intracellular Ca²⁺ concentration from 50 to 180nM. Remarkably, calcium concentrations are raised transiently to 0.8-1.5 μ M. DNA and protein analysis in Ionomycin (SQ23377)-treated cultures revealed DNA fragmentation and PARP cleavage to an 85-kDa fragment typical of caspase-mediated apoptosis. Three hours after addition of ionomycin, the percentage of early apoptotic cells approximately doubles. Necrosis could be detected in ~1-5% of the Ionomycin (SQ23377) treated cells as supported by simultaneously positive fluorescein labeling and propidium iodide uptake. Caspase activation in whole cells was followed by monitoring the increase in activity against Ac-DEVD-amc following Ionomycin (SQ23377) treatment.

IC50 & Target : Calcium channel

Solvent & Solubility Ethanol : \geq 10 mg/mL (14.10 mM)

Storage condition

-20°C

For Research Use Only. Not For Use In Diagnostic Procedures.

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