**Ionomycin (free acid)**

****

**Technical literature is available at:** [**www.mesgenbio.com**](http://www.mesgenbio.com)**. E-mail MesGen Technical Services if you have questions on use of this system: tech@mesgenbio.com**

**Catalog Number : MG6613 CAS :** 56092-81-0  **Packaging Size :** 14.1 mM\*100  μL in Ethanol

**![[field:text /]]()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 μM 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 0.8-1.5μM. 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 :** ≥ 10 mg/mL (14.10 mM)

**Storage condition**

**-20**°C

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