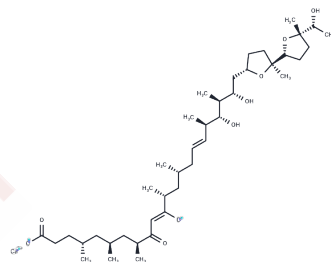


Ionomycin calcium

Chemical Properties

CAS No. :	56092-82-1
Formula:	C ₄₁ H ₇₀ CaO ₉
Molecular Weight:	747.07
Storage:	Store at low temperature Powder: -20°C for 3 years In solvent: -80°C for 1 year <i>Actual storage temperature shall be subject to the COA.</i>



Biological Description

Description	Ionomycin calcium (SQ23377 calcium) is an effective and selective calcium ionophore, demonstrating high specificity for divalent cations (Ca>Mg>Sr=Ba).
Targets(IC50)	Apoptosis, Calcium Channel, Antibacterial, Antibiotic, PKC
In vitro	METHODS: N1E-115 cells were treated with Ionomycin calcium (0.2-10 μM) for 3-24 h. Cell viability was determined by trypan blue dye exclusion assay. RESULTS: Ionomycin calcium induced cell death in a concentration- and time-dependent manner. [1] METHODS: Fura-2-loaded mouse cerebellar astrocytes were treated with Ionomycin calcium (0.1-10 μM) for 35 min, and cell membrane Ca(2+) concentration was monitored by changes in the Fura-2 340/380 ratio. RESULTS: With Ionomycin calcium concentrations 1 μM, Ca(2+) declined slowly after an initial peak and reached a significantly lower level after 35 min. The peak Ca(2+) was maintained at a plateau stage with 2 μM Ionomycin calcium. Ionomycin calcium Ca(2+) at concentrations >2 μM was significantly higher than the initial peak after 35 min. [2]
In vivo	METHODS: To investigate the mechanism of demyelination induced in vivo, Ionomycin calcium (2-50 μM, 0.5 μL) was dorsal column injected into SD rats. RESULTS: Ionomycin calcium-injected rats showed varying degrees of lesions observed on days 1-21, including areas of localized edema, a few scattered demyelinated axons, and larger lesions containing up to 200 demyelinated or degenerated axons. [3]

Solubility Information

Solubility	DMSO: 9 mg/mL (12.05 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 0.5 mg/mL (0.67 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.3386 mL	6.6928 mL	13.3856 mL
5 mM	0.2677 mL	1.3386 mL	2.6771 mL
10 mM	0.1339 mL	0.6693 mL	1.3386 mL
50 mM	0.0268 mL	0.1339 mL	0.2677 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Nakamura S, et al. Ionomycin-induced calcium influx induces neurite degeneration in mouse neuroblastoma cells: analysis of a time-lapse live cell imaging system. *Free Radic Res.* 2016; 50(11):1214-1225.

Chen X C, Tang G X, Luo W H, et al. Monitoring and Modulating mtDNA G-Quadruplex Dynamics Reveal Its Close Relationship to Cell Glycolysis. *Journal of the American Chemical Society.* 2021

Müller MS, et al. Complex actions of ionomycin in cultured cerebellar astrocytes affecting both calcium-induced calcium release and store-operated calcium entry. *Neurochem Res.* 2013 Jun; 38(6):1260-5.

Smith KJ, et al. Central demyelination induced in vivo by the calcium ionophore ionomycin. *Brain.* 1994 Dec; 117 (Pt 6):1351-6.

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