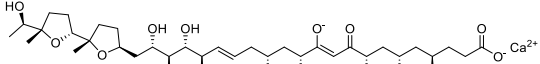


Product data sheet



MedKoo Cat#: 540222 Name: Ionomycin calcium CAS: 56092-82-1 (calcium) Chemical Formula: C ₄₁ H ₇₀ CaO ₉ Molecular Weight: 747.08		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Ionomycin calcium is a polyether Ca²⁺ ionophore. Its depletion of intracellular Ca²⁺ stores may be linked to the induction of apoptosis.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	1.2	1.61
DMSO	34.34	45.97
Ethanol	47.36	63.39
Ethanol:PBS (pH 7.2) (1:1)	0.5	0.67

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.34 mL	6.69 mL	13.39 mL
5 mM	0.27 mL	1.34 mL	2.68 mL
10 mM	0.13 mL	0.67 mL	1.34 mL
50 mM	0.03 mL	0.13 mL	0.27 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Wang Y, Xing KY, Lou MF. Regulation of cytosolic phospholipase A2 (cPLA2 α) and its association with cell proliferation in human lens epithelial cells. Invest Ophthalmol Vis Sci. 2011 Oct 17;52(11):8231-40. doi: 10.1167/iovs.11-7542. PMID: 21896865; PMCID: PMC3208028.
- Yi FX, Magness RR, Bird IM. Simultaneous imaging of [Ca²⁺]_i and intracellular NO production in freshly isolated uterine artery endothelial cells: effects of ovarian cycle and pregnancy. Am J Physiol Regul Integr Comp Physiol. 2005 Jan;288(1):R140-8. doi: 10.1152/ajpregu.00302.2004. Epub 2004 Aug 5. PMID: 15297265.

In vivo study

- Han BS, Gao JL. Effects of chemical combinations on the parthenogenetic activation of mouse oocytes. Exp Ther Med. 2013 May;5(5):1281-1288. doi: 10.3892/etm.2013.1018. Epub 2013 Mar 19. PMID: 23737865; PMCID: PMC3671782.

7. Bioactivity

Biological target:

Product data sheet



Ionomycin calcium (SQ23377 calcium) is a potent, selective calcium ionophore and an antibiotic produced by *Streptomyces conglobatus*. Ionomycin calcium (SQ23377 calcium) is highly specific for divalent cations (Ca>Mg>Sr=Ba). Ionomycin (SQ23377) promotes apoptosis. Ionomycin calcium (SQ23377 calcium) also induces the activation of protein kinase C (PKC).

In vitro activity

While thapsigargin is known to release calcium stored in the ER specifically, ionomycin is also capable of releasing calcium stored in the ER as well as infusing calcium extracellularly. These results confirmed this feature of ionomycin in the HLE B3 cells (Fig. 5B). These results suggest that ionomycin-enriched intracellular calcium may have initiated calcium signaling that is capable of mobilizing and activating cPLA2 for the downstream process needed for cell proliferation.

Reference: Invest Ophthalmol Vis Sci. 2011 Oct 17;52(11):8231-40. <https://pubmed.ncbi.nlm.nih.gov/21896865/>

In vivo activity

Ethanol (EH), strontium chloride (SrCl₂) and ionomycin calcium salt were each combined with cytochalasin B to induce the parthenogenetic activation of CD-1[®] mouse oocytes. Among the ionomycin calcium salt combination groups, the blastocyst formation and hatching rates of the group that was activated with ionomycin and CB for 3 min were higher compared with those of the groups that were activated for 5 and 7 min (P<0.05).

Reference: Exp Ther Med. 2013 May;5(5):1281-1288. <https://pubmed.ncbi.nlm.nih.gov/23737865/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.