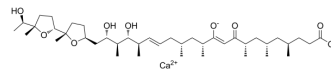


## Ionomycin calcium

<b>Cat. No.:</b>	HY-13434A
<b>CAS No.:</b>	56092-82-1
<b>Molecular Formula:</b>	C <sub>41</sub> H <sub>70</sub> CaO <sub>9</sub>
<b>Molecular Weight:</b>	747.07
<b>Target:</b>	Calcium Channel; PKC; Apoptosis; Bacterial; Antibiotic
<b>Pathway:</b>	Membrane Transporter/Ion Channel; Neuronal Signaling; Epigenetics; TGF-beta/Smad; Apoptosis; Anti-infection
<b>Storage:</b>	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 50 mg/mL (66.93 mM; Need ultrasonic)					
	<b>Preparing Stock Solutions</b>	<b>Solvent</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>Concentration</b>				
		<b>1 mM</b>		1.3386 mL	6.6928 mL	13.3856 mL
		<b>5 mM</b>		0.2677 mL	1.3386 mL	2.6771 mL
	<b>10 mM</b>		0.1339 mL	0.6693 mL	1.3386 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (3.35 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (3.35 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (3.35 mM); Clear solution</li> </ol>					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Ionomycin calcium (SQ23377 calcium) is a potent, selective calcium ionophore and an antibiotic produced by <i>Streptomyces conglobatus</i> . 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) [1][2][3].
<b>IC<sub>50</sub> &amp; Target</b>	Calcium ionophore <sup>[1]</sup>
<b>In Vitro</b>	Ionomycin is a Calcium ionophore and an antibiotic produced by <i>Streptomyces conglobatus</i> <sup>[1]</sup> .

Addition of 2  $\mu\text{M}$  Ionomycin to LCLC 103H cells causes an instantaneous increase in intracellular  $\text{Ca}^{2+}$  concentration from 50 to 180 nM. DNA and protein analysis in Ionomycin-treated cultures revealed DNA fragmentation and PARP cleavage to an 85-kDa fragment typical of caspase-mediated apoptosis. Necrosis could be detected in ~1-5% of the Ionomycin treated cells. Caspase activation in whole cells was followed by monitoring the increase in activity against Ac-DEVD-amc following Ionomycin treatment<sup>[2]</sup>. Ionomycin-mediated cleavage and exosome release. Following Ionomycin exposure, medium conditioned by SKOV3ip cells had increased amounts of exosomes containing the L1-32 cleavage fragment<sup>[4]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Cancer Cell. 2023 Jun 12;41(6):1170-1185.e12.
- Cell Mol Immunol. 2022 Feb 22.
- Protein Cell. 2021 Oct 22;1-21.
- Sci Transl Med. 2020 Nov 25;12(571):eaaz6667.
- Nat Commun. 2023 Feb 23;14(1):1020.

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## REFERENCES

- [1]. Liu C, et al. Characterization of ionomycin as a calcium ionophore. J Biol Chem. 1978 Sep 10;253(17):5892-4.
- [2]. Chatila T, et al. Mechanisms of T cell activation by the calcium ionophore ionomycin. J Immunol. 1989 Aug 15;143(4):1283-9.
- [3]. Gil-Parrado S, et al. Ionomycin-activated calpain triggers apoptosis. A probable role for Bcl-2 family members. J Biol Chem. 2002 Jul 26;277(30):27217-26.
- [4]. Stoeck A, et al A role for exosomes in the constitutive and stimulus-induced ectodomain cleavage of L1 and CD44. Biochem J. 2006 Feb 1;393(Pt 3):609-18.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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