
Product Data Sheet

Product Name: Calcimycin hemimagnesium

Cat. No.: GC60668

Chemical Properties

Cas. No. 72124-77-7

SMILES CNC1=CC=C2OC(C[C@@H]3[C@@H](CC[C@@]4(O3)[C@@H](C[C@H]([C@H](O4)[C@@H](C(C5=CC=CN5)=O)C)C)C)=NC2=C1C([O-])[Mg+2][O-]C(C6=C7N=C(C[C@H]8O[C@]9(O[C@H]([C@H](C)C(C%10=CC=CN%10)=O)[C@H](C)C[C@H]9C)CC[C@H]8C)OC7=CC=C6NC)=O)=O

Formula C₅₈H₇₂MgN₆O₁₂ M.Wt 1069.53

Solubility Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

Background

Calcimycin (A-23187) hemimagnesium is an antibiotic and a unique divalent cation ionophore (like calcium and magnesium). Calcimycin hemimagnesium induces Ca²⁺-dependent cell death by increasing intracellular calcium concentration. Calcimycin hemimagnesium inhibits the growth of Gram-positive bacteria and some fungi. Calcimycin hemimagnesium also inhibits the activity of ATPase and uncouples oxidative phosphorylation (OXPHOS) of mammalian cells. Calcimycin hemimagnesium induces apoptosis[1][2][3][4].

Calcimycin (A-23187) hemimagnesium mediates mycobacterial killing by inducing intracellular calcium-regulated autophagy in a P2RX7 dependent manner[4].

Calcimycin (A-23187) hemimagnesium (2.5 or 7.5 nM; intrapleurally) induces protein leakage[5]. Animal Model: Mice (ICR, 25-30 g)[5]

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

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[1]. Wu Q, et al. Characterization of the biosynthesis gene cluster for the pyrrole polyether antibiotic calcimycin(A23187) in *Streptomyces chartreusis* NRRL 3882. *Antimicrob Agents Chemother*. 2011 Mar;55(3):974-82. [2]. Elliott JI, et al. IKCa1 activity is required for cell shrinkage, phosphatidylserine translocation and death in Tlymphocyte apoptosis. *EMBO Rep*. 2003 Feb;4(2):189-94. [3]. Engedal N, et al. Modulation of intracellular calcium homeostasis blocks autophagosome formation. *Autophagy*. 2013 Oct;9(10):1475-90. [4]. Mawatwal S, et al. Calcimycin mediates mycobacterial killing by inducing intracellular calcium-regulated autophagy in a P2RX7 dependent manner. *Biochim Biophys Acta Gen Subj*. 2017 Dec;1861(12):3190-3200. [5]. Wang JP, et al. Effect of norathyriol, isolated from *Tripterospermum lanceolatum*, on A23187-induced pleurisy and analgesia in mice. *Naunyn Schmiedebergs Arch Pharmacol*. 1994 Jul;350(1):90-5.

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