

Product Data Sheet

Product Name: A23187
Cat. No.: GC11200

Chemical Properties

Cas. No. 52665-69-7

Chemical Name 5-(methylamino)-2-(((2S,3S,6S,8R,9S,11S)-3,9,11-trimethyl-8-((S)-1-oxo-1-(1H-pyrrol-2-yl)propan-2-yl)-1,7-dioxaspiro[5.5]undecan-2-yl)methyl)benzo[d]oxazole-4-carboxylic acid

SMILES O=C(C1=CC=CN1)[C@@H](C)[C@@H]2O[C@@]3([C@@H](C)C[C@@H]2C)O[C@@H](CC4=NC5=C(C(O)=O)C(NC)=CC=C5O4)[C@@H](C)CC3

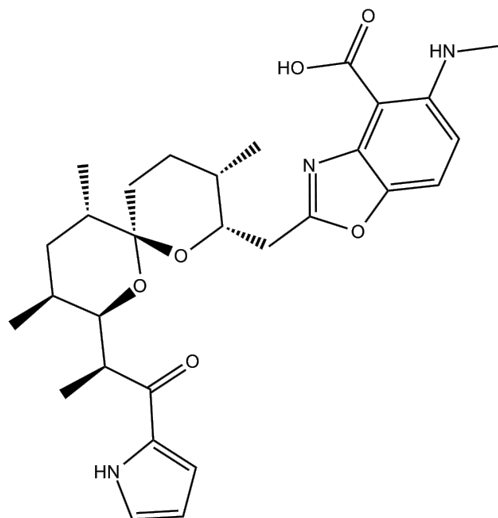
Formula $C_{29}H_{37}N_3O_6$ M.Wt 523.63

Solubility 1mg/ml in DMSO, 10mg/mL in DMF 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

A23187, free acid is a Ca^{2+} ionophore [1].

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

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Ca²⁺ ionophore acts as a Ca²⁺ ionophore, allowing Ca²⁺ to cross cell membranes.

A23187, free acid is a Ca²⁺ ionophore. In rat Kupffer cells, A23187 induced hydrolysis of phosphoinositides to inositol phosphates and released inositol phosphates from the cells in a concentration- and time-dependent way [1]. In HL-60 cells, A23187 increased intracellular Ca²⁺ levels. Also, A23187 generated reactive oxygen species (ROS) both in intracellular and extracellular and induced apoptotic cell death, which was dependent on mitochondrial permeability transition [2]. In ileal muscle, A23187 (10⁻⁵ M) induced initial contraction and small rhythmic contractions with decrease in phosphocreatinine (PCr), ATP and glycogen contents under hypoxic conditions. However, A23187 (10⁻⁵ M) induced initial contraction and successive rhythmic contractions with a significant decrease in the ATP and glycogen contents in glucose-free medium [3]. In rat C6 glioma cells that was resistant to ZnCl₂ (250 μM), A23187 (100 nM) and Zn²⁺ (150 μM) significantly induced apoptosis. Also, A23187 (1.9 nM) significantly increased the intracellular mobile Zn²⁺ content. These results suggested that the apoptosis induced by Zn²⁺ and A23187 was the result of increased Zn²⁺ influx induced by A23187 [4].

References:

- [1]. Gandhi CR, Harvey SA, Cevallos M, et al. A23187 causes release of inositol phosphates from cultured rat Kupffer cells. *Eur J Pharmacol*, 2001, 415(1): 13-18.
- [2]. Kajitani N, Kobuchi H, Fujita H, et al. Mechanism of A23187-induced apoptosis in HL-60 cells: dependency on mitochondrial permeability transition but not on NADPH oxidase. *Biosci Biotechnol Biochem*, 2007, 71(11): 2701-2711.
- [3]. Nasu T, Nishikawa M. Metabolic dependency of ionophore A23187-induced contraction of ileal longitudinal smooth muscle. *J Auton Pharmacol*, 2000, 20(2): 99-109.
- [4]. Jansen S, Arning J, Beyersmann D. Effects of the Ca ionophore a23187 on zinc-induced apoptosis in C6 glioma cells. *Biol Trace Elem Res*, 2003, 96(1-3): 133-142.

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