

Store at
-20C
#23911**A23187 (Calcimycin)**

5 mg



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Background

The calcium ionophore A23187 (Calcimycin) is an antibiotic that induces Ca²⁺-dependent cell death by increasing intracellular concentrations of calcium ions. It is a commonly used biochemical and pharmacological tool due to its multiple, unique biological effects (1). A23187 treatment of murine embryonic fibroblasts and human colon cancer cells induced autophagy in both cell lines (2). Anti-microbial A23187 strongly inhibits *Mycobacterium bovis* BCG growth *in vitro* and in THP-1 cells by regulating intracellular calcium and inducing autophagy (3). A23187 treatment of HL-60 cells triggers increased intracellular levels of Ca²⁺, generation of both intracellular and extracellular reactive oxygen species (ROS), and induction of apoptotic cell death (4). An increase in ROS is also seen in A23187-treated rat neonatal cardiac myocytes and in murine and human platelets accompanied by platelet particle formation (5,6). A23187 treatment can activate oocytes and produce normal embryos in cases of dysfunctional oocyte activation caused by insufficient Ca²⁺ release from the endoplasmic reticulum (6).

Molecular FormulaC₂₉H₃₇N₃O₆**Molecular Weight**

523.6 g/mol

Purity

>98%

CAS

52665-69-7

Solubility

Soluble in DMSO at 25 mg/mL or ethanol at 5 mg/mL.

Storage

Store lyophilized at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20°C and use within 3 months to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

Directions for Use

A23187 (Calcimycin) is supplied as a lyophilized powder. For a 15 mM stock, reconstitute 5 mg of powder in 0.64 mL of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

Background References

1. Sakanashi, Y. et al. (2009) *Toxicol In Vitro* 23, 338-45.
2. Ding, W.X. et al. (2007) *J Biol Chem* 282, 4702-4710.
3. Mawatwal, S. et al. (2017) *Biochim Biophys Acta Gen Subj* 1861, 3190-3200.
4. Kajitani, N. et al. (2007) *Biosci Biotechnol Biochem* 71, 2701-11.
5. Przygodzki, T. et al. (2005) *Biochim Biophys Acta* 1740, 481-8.
6. Nardi, M.A. et al. (2007) *Blood* 110, 1989-96.

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