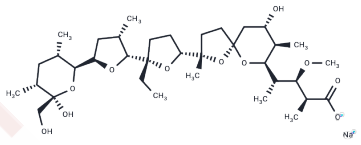
Data Sheet (Cat.No.T1033)

TargetMol

Monensin sodium salt

Chemical Properties



CAS No. : 22373-78-0

Formula: C36H61NaO11

Molecular Weight: 692.85

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Monensin sodium salt (Monensin A sodium salt) is an antibiotic secreted by Streptomyces cinnamaticus and acts as an ion carrier that mediates Na+/H+ exchange. Monensin is an effective inhibitor of Wnt signaling. Monensin causes a significant increase in multivesicular bodies (MVBs) and regulates exosome secretion. Monensin sodium salt exhibits biological activities including anticoccidial, antibacterial, antitumor, and cell signaling regulatory effects. Monensin sodium salt can be used in studies of cellular ion transport and metabolism.
Targets(IC50)	Apoptosis,Antibacterial,Antibiotic,Parasite,Antifungal,Sodium Channel,Wnt/beta-catenin
In vitro	**Methods**: Primary and immortalized RPTCs were cultured and treated with 10 μmol/L monensin sodium salt for 24 hours. Changes in NBCe2 protein expression and localization were detected via immunofluorescence and Western blot analysis. **Results**: Following monensin sodium salt treatment, NBCe2 expression increased on the cell surface. [1] **Methods**: hRPTCs loaded with SBFI (sodium-sensitive fluorescent dye) were treated with 10 μmol/L monensin sodium salt for 30 minutes. Changes in intracellular sodium concentration were monitored in real-time post-treatment. **Results**: Monensin sodium salt significantly increased the F340/F380 SBFI fluorescence ratio, demonstrating its ability to effectively elevate intracellular sodium concentration. [1]
In vivo	**Methods**: Adult male ICR mice were randomly divided into three groups (9 mice per group): Control group: Free access to water for 28 days; Cadmium poisoning group: Cadmium acetate (20 mg/kg body weight) administered orally daily for the first 14 days, followed by free access to water for the subsequent 14 days; Monensin treatment group: Same cadmium exposure as above for the first 14 days, followed by daily oral administration of monensin tetrahydrate (16 mg/kg body weight) for the subsequent 14 days. From day 15 to day 28, monensin sodium salt (16 mg/kg) was administered orally for 14 consecutive days. **Results**: Monensin sodium salt treatment significantly reduced hepatic cadmium concentration by approximately 50% and restored cadmium-disturbed hepatic copper and zinc levels. [2]

Solubility Information

Solubility	Ethanol: 12.5 mg/mL (18.04 mM),Sonication is recommended. DMSO: < 1 mg/mL (insoluble or slightly soluble) (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% EtOH+90% Corn Oil: 1 mg/mL (1.44 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4433 mL	7.2166 mL	14.4331 mL
5 mM	0.2887 mL	1.4433 mL	2.8866 mL
10 mM	0.1443 mL	0.7217 mL	1.4433 mL
50 mM	0.0289 mL	0.1443 mL	0.2887 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Gildea JJ, et al. The sodium-bicarbonate cotransporter NBCe2 (slc4a5) expressed in human renal proximal tubules shows increased apical expression under high-salt conditions. Am J Physiol Regul Integr Comp Physiol. 2015 Dec 1; 309(11):R1447-59.
Duan X, Chen H, Zhou X, et al. EBV infection in epithelial malignancies induces resistance to antitumor natural killer cells via F3-mediated platelet aggregation. Cancer Research. 2022
Zhang X, Wu S, Liu J, et al.A Mosaic Nanoparticle Vaccine Elicits Potent Mucosal Immune Response with Significant Cross-Protection Activity against Multiple SARS-CoV-2 Sublineages.Advanced Science.2023: 2301034.
Ivanova J, et al. Monensin ameliorates cadmium-induced hepatic injury in mice, subjected to subacute cadmium intoxication. Biotechnol Biotechnol Equip. 2014 Jan 2;28(1):147-152.
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