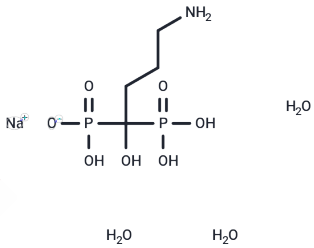
Data Sheet (Cat.No.T6373)

TargetMol

Alendronate sodium trihydrate

Chemical Properties



CAS No. :	121268-17-5
Formula:	C4H12NO7P2·3H2O·Na
Molecular Weight:	325.12
Appearance:	no data available
Storage:	Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Alendronate sodium hydrate (MK 217) is a nitrogen-containing bisphosphonate, which is an effective inhibitor of bone resorption. It is utilized for the treatment and prevention of osteoporosis.
Targets(IC50)	Transferase
In vitro	In mice, pretreatment with 0.1 mg/kg of Alendronate one to two times a week, in combination with 10-50 mg/kg of paclitaxel, effectively inhibits the growth of PC-3 ML tumors in bone marrow and soft tissue, significantly extending survival times to 4-5 weeks. In rats, Alendronate exacerbates indomethacin-induced gastric damage and delays the healing of gastric ulcers. In rabbits, Alendronate causes gastric erosion and increases the incidence and area of indomethacin-induced antral ulcers.
In vivo	Sodium alendronate primarily inhibits the rate-limiting step in the cholesterol biosynthesis pathway within osteoclasts. Lowering the levels of farnesyl pyrophosphate interferes with protein prenylation and concurrently inhibits the biosynthesis pathway of isoprenoids. Additionally, sodium alendronate acts to suppress sterol in osteoclasts.
Kinase Assay	Rat liver cytosol is prepared from a separate piece of liver from rat. Assays are carried out in a total volume of 0.1 mL containing 10 mg of cytosolic protein, and components according to Rilling. All reaction components (except IPP) are mixed and kept on ice for 15 min. Reactions are initiated by the addition of [14C]IPP and incubation at 37°C. Reactions are stopped after 5 min by addition of 0.4 mL MeOH/HCl (4/1, by vol.) and the samples are incubated a further 15 min to hydrolyze the allylic pyrophosphates to petroleum ether-extractable products. Following addition of 0.5 mL water and 1 mL petroleum ether, 50% of the upper (petroleum ether-extractable) phase is taken for liquid scintillation analysis. Preliminary experiments indicated that the reaction is linear with time and protein under these conditions, and no more than 10% of the substrate is consumed.

Solubility Information

Solubility	H2O: 28.57 mg/mL (87.88 mM),Sonication is recommended. DMSO: Slightly soluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.0758 mL	15.3789 mL	30.7579 mL
5 mM	0.6152 mL	3.0758 mL	6.1516 mL
10 mM	0.3076 mL	1.5379 mL	3.0758 mL
50 mM	0.0615 mL	0.3076 mL	0.6152 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.

Reference

Fisher JE, et al. Proc Natl Acad Sci U S A, 1999, 96(1), 133-138.
Bergstrom JD, et al. Arch Biochem Biophys, 2000, 373(1), 231-241.
Keller RK, et al. Biochem Biophys Res Commun, 1999, 266(2), 560-563.
Elliott SN, et al. Life Sci, 1998, 62(1), 77-91.
Stearns ME, et al. Invasion Metastasis, 1996, 16(3), 116-131.

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