Data Sheet (Cat.No.T8400)

TargetMol

Pamidronic acid

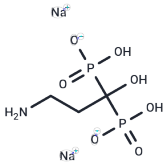
Chemical Properties

CAS No. : 40391-99-9

Formula: C3H11NO7P2

Molecular Weight: 235.07

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	Pamidronic acid Leads to Bone Necrosis via Suppression of Wnt/β-Catenin Signaling in Human Bone Marrow Mesenchymal Stem Cells
Targets(IC50)	Antibacterial,RANKL/RANK,TLR,Wnt/beta-catenin
In vitro	Pamidronate disodium inhibited Wnt and β-catenin signaling, which controls osteogenic differentiation in BMMSCs. Wnt3a, a Wnt and β-catenin signaling activator, reversed the negative effects caused by pamidronate disodium to salvage the osteogenic defect in BMMSCs[1].
Cell Research	Primary human BMMSCs were isolated from the mandible and marrow tissue. A proliferation assay was performed to determine the experimental concentration of pamidronate disodium. Alkaline phosphatase (ALP) activity, ALP staining, and Alizarin red S (ARS) staining were assessed after treatment with pamidronate disodium (0, 0.1, 0.5, 1, 5, 10 μg/mL). Quantitative real-time polymerase chain reaction and western blotting specific for Wnt and β-catenin signaling genes or proteins were performed after treatment with pamidronate disodium 0.5 μg/mL. Wnt3a was used to observe the osteogenic differentiation of BMMSCs during treatment with pamidronate disodium 0.5 μg/mL[1].

Solubility Information

Solubility	H2O: 2.56 mg/mL (10.89 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.2541 mL	21.2703 mL	42.5405 mL
5 mM	0.8508 mL	4.2541 mL	8.5081 mL
10 mM	0.4254 mL	2.127 mL	4.2541 mL
50 mM	0.0851 mL	0.4254 mL	0.8508 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

Pamidronate Disodium Leads to Bone Necrosis via Suppression of Wnt/β-Catenin Signaling in Human Bone Marrow Mesenchymal Stem Cells In Vitro. J Oral Maxillofac Surg. 2017 Mar 22.
Ashton JA, et al. Investigation of the effect of pamidronate disodium on the in vitro viability of osteosarcoma cellsfrom dogs. Am J Vet Res. 2005 May;66(5):885-91.