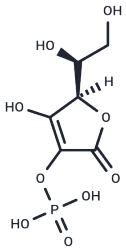
Data Sheet (Cat.No.T19390)

TargetMol

L-Ascorbic acid 2-phosphate

Chemical Properties



CAS No. : 23313-12-4

Formula: C6H9O9P

Molecular Weight: 256.1

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	L-ascorbic acid 2-phosphate (Vitamin C phosphate) is a stable and long-lasting vitamin C derivative that stimulates collagen formation and has potential antioxidant capacity. L-ascorbic acid 2-phosphate is commonly used to promote osteogenic differentiation of human adipose stem cells (hASCs) in cell culture by increasing alkaline phosphatase (ALP) activity and runt-related transcription factor-2-DNA(runx2A) expression.
Targets(IC50)	Others,Reactive Oxygen Species,Endogenous Metabolite,Phosphatase,ROS
In vitro	L-Ascorbic acid 2-phosphate (0.1-1.5 mM, every 2-3 days for 2-3 weeks) significantly stimulated cell growth, whereas addition of L-ascorbic acid (Asc) only achieved weak growth stimulation. [1] L-Ascorbic acid 2-phosphate (50 μM-250 μM) is required for efficient osteogenic differentiation of human adipose-derived stem cells (hASCs), and higher concentrations of AsA2-P lead to increased runx2 expression and ALP activity. [3]

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble) 1 M HCl: 20 mg/mL (78.09 mM),Sonication is recommended. 0.1 M HCl: 10 mg/mL (39.05 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.9047 mL	19.5236 mL	39.0472 mL
5 mM	0.7809 mL	3.9047 mL	7.8094 mL
10 mM	0.3905 mL	1.9524 mL	3.9047 mL
50 mM	0.0781 mL	0.3905 mL	0.7809 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

Shima N, et al. Increased proliferation and replicative lifespan of isolated human corneal endothelial cells with L-ascorbic acid 2-phosphate.Invest Ophthalmol Vis Sci. 2011 Nov 7;52(12):8711-7.

Kurata S, et al. Epidermal growth factor inhibits transcription of type I collagen genes and production of type I collagen in cultured human skin fibroblasts in the presence and absence of L-ascorbic acid 2-phosphate, a long-acting vitamin C derivative.J Biol Chem. 1991 May 25;266(15):9997-10003.

Kyllönen L, et al. Effects of different serum conditions on osteogenic differentiation of human adipose stem cells in vitro.StemCellRes Ther. 2013 Feb 15;4(1):17.

Song W, et al. Enzymatic Production of Ascorbic Acid-2-Phosphate by Engineered Pseudomonas aeruginosa Acid Phosphatase. J Agric Food Chem. 2021 Dec 1;69(47):14215-14221.

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