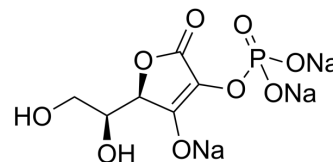


L-Ascorbic acid 2-phosphate trisodium

Cat. No.:	HY-107837
CAS No.:	66170-10-3
Molecular Formula:	C ₆ H ₆ Na ₃ O ₉ P
Molecular Weight:	322.05
Target:	Reactive Oxygen Species; Endogenous Metabolite; Phosphatase
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	4°C, sealed storage, away from moisture
	* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro	H ₂ O : 150 mg/mL (465.77 mM; Need ultrasonic)				
	DMSO : 6 mg/mL (18.63 mM; Need ultrasonic and warming)				
	Preparing Stock Solutions	<div>Solvent Mass Concentration</div>	1 mg	5 mg	10 mg
		1 mM	3.1051 mL	15.5255 mL	31.0511 mL
		5 mM	0.6210 mL	3.1051 mL	6.2102 mL
		10 mM	0.3105 mL	1.5526 mL	3.1051 mL
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	1. Add each solvent one by one: PBS Solubility: 120 mg/mL (372.61 mM); Clear solution; Need ultrasonic				

BIOLOGICAL ACTIVITY

Description	L-Ascorbic acid 2-phosphate trisodium (2-Phospho-L-ascorbic acid trisodium) is a long-acting vitamin C derivative that can stimulate collagen formation and expression ^[1] . L-Ascorbic acid 2-phosphate trisodium (2-Phospho-L-ascorbic acid trisodium) can be used as a culture medium supplement for the osteogenic differentiation of human adipose stem cells (hASCs). L-Ascorbic acid 2-phosphate trisodium (2-Phospho-L-ascorbic acid trisodium) increases alkaline phosphatase (ALP) activity and expression of runx2A in hASCs during the osteogenic differentiation ^{[2][3]} .
IC ₅₀ & Target	Human Endogenous Metabolite
In Vitro	L-Ascorbic acid 2-phosphate (0.1-1.5 mM; 2 to 3 weeks with medium exchange every 2 to 3 days) trisodium significantly stimulates cell growth, whereas addition of l-Ascorbic acid (Asc) achieves only weak growth stimulation. A combination of Asc-2P and bFGF significantly increases cell growth, but supplementation with EGF and/or insulin does not have any additional effect ^[1] . L-Ascorbic acid 2-phosphate (50 μM-250 μM) trisodium is needed for the effective osteogenic differentiation of human

adipose stem cells (hASCs), and higher concentrations of AsA2-P results in increased runx2 expression and ALP activity. The highest proliferation, ALP activity and runx2 expression is achieved with 150 μ M AsA2-P and 10 nM dexamethasone (Dex), and 250 μ M AsA2-P and 5 nM Dex^[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Autophagy. 2022 Jul 4.

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REFERENCES

- [1]. 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.
- [2]. 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.
- [3]. Kyllönen L, et al. Effects of different serum conditions on osteogenic differentiation of human adipose stem cells in vitro. Stem Cell Res Ther. 2013 Feb 15;4(1):17.

Caution: Product has not been fully validated for medical applications. For research use only.

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