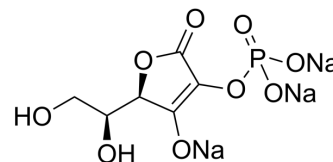


L-Ascorbic acid 2-phosphate trisodium

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)																										
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> <tr> <th>Concentration</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td rowspan="4">Preparing Stock Solutions</td> <td>1 mM</td> <td>3.1051 mL</td> <td>15.5255 mL</td> <td>31.0511 mL</td> </tr> <tr> <td>5 mM</td> <td>0.6210 mL</td> <td>3.1051 mL</td> <td>6.2102 mL</td> </tr> <tr> <td>10 mM</td> <td>0.3105 mL</td> <td>1.5526 mL</td> <td>3.1051 mL</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Solvent	Mass	1 mg	5 mg	10 mg	Concentration				Preparing Stock Solutions	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				
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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]} .
IC₅₀ & 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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