

Product Data Sheet

L-Ascorbic acid 2-phosphate magnesium hydrate

Cat. No.:	HY-103701B		
CAS No.:	1713265-25-8	НО	0
Molecular Formula:	C ₆ H ₉ O ₉ P.xH ₂ O.3/2Mg	HO,	, O II
Target:	Phosphatase; Reactive Oxygen Species; Endogenous Metabolite	H	O ^P OH
Pathway:	Metabolic Enzyme/Protease; Immunology/Inflammation; NF-кВ	нο	OH
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)	3/2 Mg	х Н ₂ О

DIGEOGICAL ACTIV					
Description	L-ascorbic acid 2-phosphate (2-Phospho-L-ascorbic acid) magnesium hydrate is a long-acting vitamin C derivative that can stimulate collagen formation and expression. L-ascorbic acid 2-phosphate magnesium hydrate can be used as a culture medium supplement for the osteogenic differentiation of human adipose stem cells (hASCs). L-ascorbic acid 2-phosphate magnesium hydrate increases alkaline phosphatase (ALP) activity and expression of runx2A in hASCs during the osteogenic differentiation ^{[1][2][3]} .				
In Vitro	L-Ascorbic acid 2-phosphate (0.1-1.5 mM; 2 to 3 weeks with medium exchange every 2 to 3 days) magnesium hydrate significantly stimulates cell growth, whereas addition of I-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) magnesium hydrate 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 µM AsA2-P and 10 nM dexamethasone (Dex), and 250 µM AsA2-P and 5 nM Dex ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Proliferation Assay ^[1]				
	Cell Line:	Human corneal endothelial cells (HCECs)			
	Concentration:	0.1 mM; 0.3 mM; 1.5 mM			
	Incubation Time:	2 to 3 weeks with medium exchange every 2 to 3 days			
	Result:	Stimulated HCEC cells growth.			

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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