产品名称：L-抗坏血酸-2-磷酸酯镁 水合物

生物活性： L-Ascorbic acid 2-phosphate magnesium (2-Phospho-L-ascorbic acid magnesium) is a long-acting vitamin C derivative that can stimulate collagen formation and expression[1]. L-Ascorbic acid 2-phosphate magnesium (2-Phospho-L-ascorbic acid magnesium) can be used as a culture medium supplement for the osteogenic differentiation of human adipose stem cells (hASCs). L-Ascorbic acid 2-phosphate magnesium (2-Phospho-L-ascorbic acid magnesium) increases alkaline phosphatase (ALP) activity and expression of runx2A in hASCs during the osteogenic differentiation[2][3].

Description	L-Ascorbic acid 2-phosphate magnesium (2-Phospho-L-ascorbic acid magnesium) 是一种长效的维生素 C 衍生物 (vitamin C derivative)，可以刺激胶原蛋白的表达和形成。L-Ascorbic acid 2-phosphate magnesium (2-Phospho-L-ascorbic acid magnesium) 可以作为培养基补充人脂肪干细胞 (hASCs) 的成骨分化。L-Ascorbic acid 2-phosphate magnesium (2-Phospho-L-ascorbic acid magnesium) 增加成骨细胞分化过程中 hASC 中的碱性磷酸酶 (ALP) 活性和 runx2A 的表达.
IC_{50} & Target	Human Endogenous Metabolite
In Vitro	L-Ascorbic acid 2-phosphate magnesium (0.1-1.5 mM；2 至 3 周，每 2 至 3 天更换一次培养基) 可显著刺激细胞生长，而添加 l-Ascorbic acid (Asc) 仅能实现微弱的生长刺激。Asc-2P 和 bFGF 的组合可显著增加细胞生长，但补充 EGF 和/或胰岛素没有任何额外的作用[1]。 人类脂肪干细胞 (hASC) 的有效成骨分化需要 L-Ascorbic acid 2-phosphate magnesium (50 μM-250 μM)，较高浓度的 AsA2-P 会导致 runx2 表达和 ALP 活性增加。150 μM AsA2-P 和 10 nM Dexamethasone (Dex) 以及 250 μM AsA2-P 和 5 nM Dex 可实现最高的增殖、ALP 活性和 runx2 表达[3]。 Yuanye has not independently confirmed the accuracy of these methods. They are for reference only..
In Vivo	Cell Viability 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.
Solvent&Solubility	细胞实验： H2O 中的溶解度 : 25 mg/mL (85.45 mM; 超声助溶)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.4181 mL	17.0905 mL	34.1810 mL
	5 mM	0.6836 mL	3.4181 mL	6.8362 mL
	10 mM	0.3418 mL	1.7091 mL	3.4181 mL

请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

* 备注：如您选择水作为储备液，请稀释至工作液后，再用 0.22 μm 的滤膜过滤除菌后使用。

完整储备液配制表

可选溶剂	浓度溶剂体积质量	1 mg	5 mg	10 mg	25 mg
H_2O	1 mM	3.4181 mL	17.0905 mL	34.1810 mL	85.4526 mL
	5 mM	0.6836 mL	3.4181 mL	6.8362 mL	17.0905 mL
	10 mM	0.3418 mL	1.7091 mL	3.4181 mL	8.5453 mL
	15 mM	0.2279 mL	1.1394 mL	2.2787 mL	5.6968 mL
	20 mM	0.1709 mL	0.8545 mL	1.7091 mL	4.2726 mL
	25 mM	0.1367 mL	0.6836 mL	1.3672 mL	3.4181 mL
	30 mM	0.1139 mL	0.5697 mL	1.1394 mL	2.8484 mL
	40 mM	0.0855 mL	0.4273 mL	0.8545 mL	2.1363 mL
	50 mM	0.0684 mL	0.3418 mL	0.6836 mL	1.7091 mL
	60 mM	0.0570 mL	0.2848 mL	0.5697 mL	1.4242 mL
	80 mM	0.0427 mL	0.2136 mL	0.4273 mL	1.0682 mL

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. [Content Brief]

[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. [Content Brief]

[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. [Content Brief]