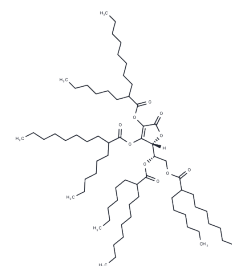


## Tetrahexyldecyl ascorbate

## Chemical Properties

CAS No. :	183476-82-6
Formula:	C70H128O10
Molecular Weight:	1129.76
Storage:	Pure form: -20°C for 3 years   In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Tetrahexyldecyl ascorbate (BV-OSC) is a lipophilic precursor of ascorbic acid, a more stable and permeable form of vitamin C. It is a potent anti-photo-aging and anti-hyperpigmentation antioxidant that inhibits MMP enzyme activity.
Targets(IC50)	MMP,Prostaglandin Receptor
In vitro	Tetrahexyldecyl ascorbate, either alone or in combination with AZ, was applied to human keratinocytes (HaCaT) and dermal fibroblasts (nHDF, aHDF), and incubated for 0.5 to 3 hours. After treatment, cell viability was assessed using CCK-8, ELISA, and gene chip technologies. The <b>Results</b> showed that Tetrahexyldecyl ascorbate reduced cell viability under oxidative stress, while its combination with AZ significantly enhanced cell activity. The combination therapy upregulated genes related to phospholipid homeostasis and keratinocyte differentiation, inhibited the expression of MMP1 and MMP7, and promoted collagen synthesis in dermal fibroblasts [1].

## Solubility Information

Solubility	DMSO: 180 mg/mL (159.33 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 5 mg/mL (4.43 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.8851 mL	4.4257 mL	8.8514 mL
5 mM	0.177 mL	0.8851 mL	1.7703 mL
10 mM	0.0885 mL	0.4426 mL	0.8851 mL
50 mM	0.0177 mL	0.0885 mL	0.177 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

- Swindell WR, et al. Tetrahexyldecyl Ascorbate (THDC) Degrades Rapidly under Oxidative Stress but Can Be Stabilized by Acetyl Zingerone to Enhance Collagen Production and Antioxidant Effects. *Int J Mol Sci.* 2021 Aug 15; 22(16):8756.
- Herndon JH Jr, Jiang L, Kononov T, Fox T. An Open Label Clinical Trial of a Multi-Ingredient Anti-Aging Moisturizer Designed to Improve the Appearance of Facial Skin. *J Drugs Dermatol.* 2015 Jul; 14(7):699-704. PubMed PMID: 26151786.
- Makino ET, Mehta RC, Banga A, Jain P, Sigler ML, Sonti S. Evaluation of a hydroquinone-free skin brightening product using in vitro inhibition of melanogenesis and clinical reduction of ultraviolet-induced hyperpigmentation. *J Drugs Dermatol.* 2013 Mar; 12(3):s16-20. PubMed PMID: 23545928.
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