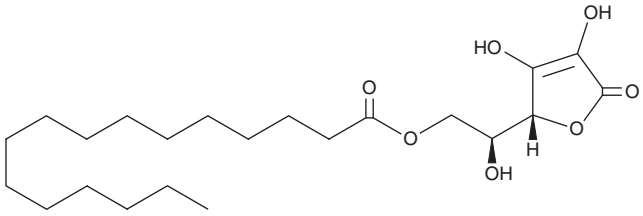
PRODUCT INFORMATION

Ascorbyl Palmitate

Item No. 29604

CAS Registry No.:	137-66-6
Formal Name:	L-ascorbic acid, 6-hexadecanoate
Synonyms:	Ascorbylpalmitic Acid, NSC 402451
MF:	$C_{22}H_{38}O_7$
FW:	414.5
Purity:	≥95%
UV/Vis.:	λ_{max}: 246 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ascorbyl palmitate is supplied as a solid. A stock solution may be made by dissolving the ascorbyl palmitate in the solvent of choice, which should be purged with an inert gas. Ascorbyl palmitate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ascorbyl palmitate in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Ascorbyl palmitate is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ascorbyl palmitate should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Ascorbyl palmitate has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Ascorbyl palmitate is a lipophilic derivative of ascorbic acid (Item No. 14656) with antioxidant and antiproliferative activities.[1-3] It scavenges hydroxyl radicals in cell-free assays.[2] Ascorbyl palmitate (0.01%) reduces the rate of autoxidation of soybean, safflower, sunflower, peanut, and corn oil.[3] It inhibits increases in epidermal ornithine decarboxylase activity and DNA synthesis induced by phorbol 12-myristate 13-acetate (TPA; Item No. 10008014) in mice in a concentration-dependent manner when applied topically.[1] Ascorbyl palmitate (0.8 and 4 µmol per 200 µl of acetone, applied topically) reduces the number of tumors per mouse and the percentage of mice with tumors in a mouse skin two-stage model of tumor formation initiated and promoted by 7,12-dimethylbenz[a]anthracene (DMBA) and TPA, respectively. Formulations containing ascorbyl palmitate have been used as antioxidants and preservatives in foods, pharmaceuticals, and cosmetics.

References

1. Smart, R.C. and Crawford, C.L. Effect of ascorbic acid and its synthetic lipophilic derivative ascorbyl palmitate on phorbol ester-induced skin-tumor promotion in mice. *Am. J. Clin. Nutr.* **54(6 Suppl.)**, 1266S-1273S (1991).
2. Perricone, N., Nagy, K., Horváth, F., *et al.* The hydroxyl free radical reactions of ascorbyl palmitate as measured in various *in vitro* models. *Biochem. Biophys. Res. Commun.* **262(3)**, 661-665 (1999).
3. Cort, W.M. Antioxidant activity of tocopherols, ascorbyl palmitate, and ascorbic acid and their mode of action. *J. Am. Oil Chem. Soc.* **51(7)**, 321-325 (1974).

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