

Product Data Sheet

Product Name: β -Tocotrienol

Cat. No.: GC11519

Chemical Properties

Cas. No. 490-23-3

Chemical Name (2R)-3,4-dihydro-2,5,8-trimethyl-2-[4,8,12-trimethyl-3E,7E,11-tridecatrien-1-yl]-2H-1-benzopyran-6-ol

SMILES C[C@]1(CC/C=C(C)/CC/C=C(C)/CC/C=C(C)/C)OC2=C(C)C=C(O)C(C)=C2CC1

Formula $C_{28}H_{42}O_2$

M.Wt 410.6

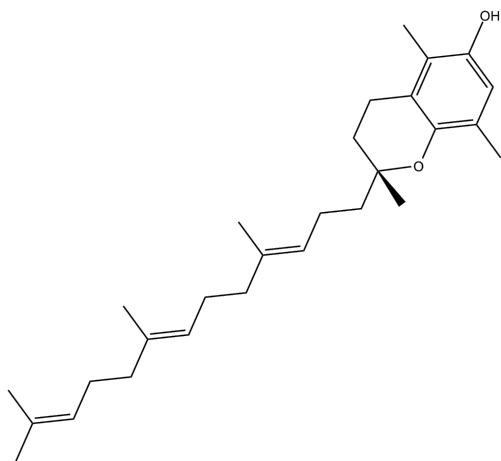
Solubility $\leq 10\text{mg/ml}$ in DMSO; 10mg/ml in dimethyl formamide

Storage -20°C , protect from light

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

β -Tocotrienol is an antioxidant.

There are four tocopherols (α , β , δ , and γ) and four tocotrienols (α , β , δ , and γ) forms of vitamin E, which is known for its antioxidant activity. Tocotrienols are present in high concentrations in palm oil.

Caution: Product has not been fully validated for medical applications. For research use only.

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and wheat germ.

In vitro: The antioxidant activity of the tocopherols and tocotrienols was found to be mainly due to their ability to donate their phenolic hydrogens to lipid free-radicals. Although it is generally agreed that the relative antioxidant activity of the tocopherols was in the order $\alpha > \beta > \gamma > \delta$ [1].

In vivo: In a previous study, mice were fed a nonpurified control diet, an atherogenic diet alone or the atherogenic diet supplemented with α - and β -tocopherols. Results showed that compared with mice fed the control diet, plasma cholesterol was fourfold greater in mice fed the atherogenic diet. Mice fed the atherogenic diet had much higher VLDL, intermediate density lipoprotein (IDL) and LDL cholesterol and markedly lower HDL cholesterol than the controls. Moreover, in mice fed the atherogenic diet, the hepatic cholesterol plus cholesterol ester concentration was 4.4-fold greater than in mice fed the control diet. Mice fed the atherogenic diet had large atherosclerotic lesions at the level of the aortic valve. The 0.5 g/100 g alpha-tocopherol and palm carotenoid supplements had no effect [2].

Clinical trial: So far, no clinical study has been conducted.

References:

1. Kamal-Eldin, A., and Appelqvist, L.. The chemistry and antioxidant properties of tocopherols and tocotrienols. *Lipids* 31, 671-701 (1996).
2. Black, T.M., Wang, O., Maeda, N., et al. Palm tocotrienols protect ApoE +/- mice from diet-induced atheroma formation. *Journal of Nutrition* 130(10), 2420-2426 (2000).

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