

Product Data Sheet

Product Name: (S)-Trolox

Cat. No.: GC38879

Chemical Properties

Cas. No. 53174-06-4

SMILES O=C([C@]1(C)CCC2=C(C)C(O)=C(C)C(C)=C2O1)O

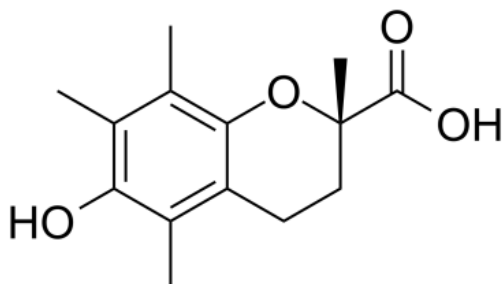
Formula $C_{14}H_{18}O_4$ M.Wt 250.29

Solubility DMSO : 100 mg/mL (399.54 mM; Storage Store at -20°C
Need ultrasonic); H_2O : < 0.1 mg/mL
(insoluble)

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

(S)-Trolox is a water-soluble analogue of vitamin E, in which the phytyl chain is replaced with a carboxyl group. (S)-Trolox is frequently used as a model compound for studies of structural features, as well as a standard for evaluation of antioxidant activity. (S)-Trolox has potent and specific neuroprotective and antioxidant effects[1][2].

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

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The neuroprotective efficacy of antioxidant molecules against iodoacetate (IAA) neurotoxicity in rat cerebellar granule cell (CGC) cultures is investigated. In the absence of MK-801, (S)-Trolox displays marginal neuroprotective effects. In the presence of MK-801 (10 μ M), the neuroprotective efficacy of (S)-Trolox is greatly enhanced, giving rise to a recovery in MTT-reductase activity equivalent to 80-100% of control cultures. (S)-Trolox displays EC50 value of 78 μ M. The fluorescence increase in IAA-stimulated DCFH-DA-loaded cultures is inhibited in a dose-dependent manner by the antioxidants (S)-Trolox with an IC50 value of 97 μ M. The antioxidant (S)-Trolox demonstrate apotent and specific neuroprotective action in an in vitro model of neurodegeneration induced by inhibition of the glycolytic enzyme GAPDH[1].

[1]. Malcolm CS, et al. Characterization of iodoacetate-mediated neurotoxicity in vitro using primary cultures of rat cerebellar granule cells. Free Radic Biol Med. 2000 Jan 1;28(1):102-7. [2]. GÓrecki M, et al. Chromane helicity rule--scope and challenges based on an ECD study of various trolox derivatives. Org Biomol Chem. 2014 Apr 14;12(14):2235-54.

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