

## Trolox

## Chemical Properties

CAS No. :	53188-07-1
Formula:	C14H18O4
Molecular Weight:	250.29
Storage:	Powder: -20°C for 3 years   In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

## Biological Description

Description	Trolox is a vitamin E analogue, used in reducing oxidative stress or damage.
Targets(IC50)	Apoptosis,Antioxidant,Ferroptosis,Reactive Oxygen Species,ROS
In vitro	<p><b>METHODS:</b> Human cervical cancer cells HeLa were treated with Trolox (2.5-160 <math>\mu</math>M) for 24 h and cell viability was measured using MTT assay.</p> <p><b>RESULTS:</b> Cell viability decreased dose-dependently, with the maximum effect observed at 160 <math>\mu</math>M Trolox. [1]</p> <p><b>METHODS:</b> Human skin fibroblasts were treated with Trolox (0.5 mM) for 96 h. The expression levels of target proteins were measured by Western Blot.</p> <p><b>RESULTS:</b> Trolox increased the mitochondrial levels of Mfn2 in primary human skin fibroblasts without affecting these levels of Drp1 and hFis1. [2]</p>
In vivo	<p><b>METHODS:</b> To investigate the neuroprotective effects, Trolox (50 mg/kg) was intraperitoneally injected once a day for ten days into an MPTP-induced Parkinson's disease mouse model.</p> <p><b>RESULTS:</b> Trolox may exert neuroprotective effects on dopaminergic neurons against MPTP-induced oxidative stress, neuroinflammation, motor dysfunction and neurodegeneration. [3]</p>

## Solubility Information

Solubility	DMSO: 50 mg/mL (199.77 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 (19.98 mM),Solution. <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	3.9954 mL	19.9768 mL	39.9537 mL
5 mM	0.7991 mL	3.9954 mL	7.9907 mL
10 mM	0.3995 mL	1.9977 mL	3.9954 mL
50 mM	0.0799 mL	0.3995 mL	0.7991 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

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- Distelmaier F, et al. Trolox-sensitive reactive oxygen species regulate mitochondrial morphology, oxidative phosphorylation and cytosolic calcium handling in healthy cells. *Antioxid Redox Signal*. 2012 Dec 15;17(12):1657-69.
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