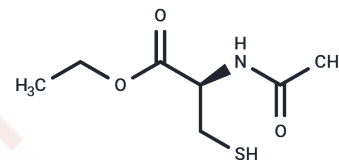


N-Acetyl-L-cysteine ethyl ester

Chemical Properties

CAS No. :	59587-09-6
Formula:	C7H13NO3S
Molecular Weight:	191.25
Storage:	Store at low temperature Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	N-Acetyl-L-cysteine ethyl ester (NACET) is a derivative of the amino acid L-cysteine. NACET has been shown to exhibit diverse biochemical and physiological effects, including inhibition of protein synthesis, inhibition of DNA replication, and induction of apoptosis. Additionally, it has demonstrated anti-inflammatory, antioxidant, and anti-cancer activity.
Targets(IC50)	Antioxidant, Reactive Oxygen Species, ROS
In vitro	Under concomitant oxidative stress induced by 2 mM H ₂ O ₂ , N-Acetyl-L-cysteine ethyl ester (NACET) showed strong and significant protective effect on RPE cells when the concentration was 0.4 mM. Moreover, NACET treatment also resulted in an enhanced protective effect when RPE cells were stressed by the organic ROS generator peroxide tert-Butyl hydroperoxide (t-BOOH). NACET significantly increased both intracellular GSH and cysteine at 0.2 and 1 mM concentrations, respectively, as well as extracellular total GSH[2].

Solubility Information

Solubility	DMSO: 45 mg/mL (235.29 mM), Sonication is recommended. H ₂ O: 90 mg/mL (470.59 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: 1 mg/mL (5.23 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	5.2288 mL	26.1438 mL	52.2876 mL
5 mM	1.0458 mL	5.2288 mL	10.4575 mL
10 mM	0.5229 mL	2.6144 mL	5.2288 mL
50 mM	0.1046 mL	0.5229 mL	1.0458 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

Giustarini D, et al. N-Acetylcysteine ethyl ester (NACET): a novel lipophilic cell-permeable cysteine derivative with an unusual pharmacokinetic feature and remarkable antioxidant potential. *Biochem Pharmacol.* 2012 Dec 1;84 (11):1522-33.

Tosi GM, et al. Superior Properties of N-Acetylcysteine Ethyl Ester over N-Acetyl Cysteine to Prevent Retinal Pigment Epithelial Cells Oxidative Damage. *Int J Mol Sci.* 2021 Jan 9;22(2):600.

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