

Gamma-glutamylcysteine TFA

Chemical Properties

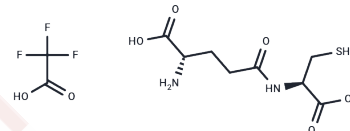
CAS No. : 283159-88-6

Formula: C10H15F3N2O7S

Molecular Weight: 364.3

Storage: Store under nitrogen, Store at low temperature
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	Gamma-glutamylcysteine TFA (γ -glutamylcysteine TFA) is a precursor of glutathione (GSH) with antioxidant and anti-inflammatory properties. It alleviates oxidative stress and mitochondrial damage induced by ethanol in hepatocytes by increasing cellular GSH, SOD activity, and mitochondrial membrane potential, protecting cells from alcohol-induced liver disease (ALD) by inhibiting oxidative stress, reducing inflammation, and preventing cell apoptosis.
Targets(IC50)	Endogenous Metabolite, GPX, IL Receptor, Interleukin, TNF
In vitro	Gamma-glutamylcysteine TFA (20, 40, and 80 μ M) pretreated L02 cells for 2 hours and exposed to ethanol for 24 hours. The results showed that γ -GC alleviated the oxidative stress and mitochondrial damage induced by alcohol by increasing the activity of GSH, SOD and mitochondrial membrane potential. [1] Gamma-glutamylcysteine TFA (0-160 μ M, 48h) alleviates TNBS-induced IBD by modulating macrophage polarization. [2]
In vivo	Gamma-glutamylcysteine TFA (600 mg/kg or 1200 mg/kg oral tube feeding) improved IBD survival and colon injury. [2]

Solubility Information

Solubility	DMSO: 80 mg/mL (219.6 mM), Sonication is recommended. H2O: 80 mg/mL (219.6 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: 3.3 mg/mL (9.06 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	2.745 mL	13.725 mL	27.4499 mL
5 mM	0.549 mL	2.745 mL	5.490 mL
10 mM	0.2745 mL	1.3725 mL	2.745 mL
50 mM	0.0549 mL	0.2745 mL	0.549 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

Liu J, et al. γ -Glutamylcysteine alleviates ethanol-induced hepatotoxicity via suppressing oxidative stress, apoptosis, and inflammation. *J Food Biochem.* 2022 Oct;46(10):e14318.

Zhou J, et al. γ -Glutamylcysteine rescues mice from TNBS-driven inflammatory bowel disease through regulating macrophages polarization. *Inflamm Res.* 2023 Mar;72(3):603-621.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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