

## Glutaric acid

## Chemical Properties

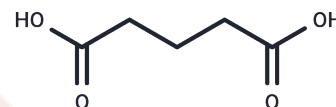
CAS No. : 110-94-1

Formula: C<sub>5</sub>H<sub>8</sub>O<sub>4</sub>

Molecular Weight: 132.11

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	Glutaric acid is a simple five-carbon linear dicarboxylic acid. Glutaric acid is naturally produced in the body during the metabolism of some amino acids, including lysine and tryptophan
Targets(IC50)	Endogenous Metabolite
In vitro	Glutaric acid, at concentrations of 1 and 2 mM, significantly reduces TRAP measurement by up to 28%, showcasing a dose-dependent efficacy ( $\beta=0.77$ ; $P<0.001$ ). Additionally, a strong inverse correlation is observed between chemiluminescence and TRAP levels ( $\beta=0.81$ ; $P<0.001$ ), indicating glutaric acid's potential impact on these parameters. Despite not affecting the activities of catalase (Cat) and superoxide dismutase (SOD), glutaric acid notably inhibits glutathione peroxidase (GPx) activity by up to 46%, starting at a minimal concentration of 0.5 mM. This inhibition is further confirmed to follow a dose-dependent pattern, beginning from concentrations as low as 0.05 mM[2], underscoring its potent and variable effect based on the dosage administered.

## Solubility Information

Solubility	Ethanol: Soluble, DMSO: 55 mg/mL (416.32 mM),Sonication is recommended. H <sub>2</sub> O: 5 mg/mL (37.85 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: 2 mg/mL (15.14 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

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	1mg	5mg	10mg
1 mM	7.5694 mL	37.8472 mL	75.6945 mL
5 mM	1.5139 mL	7.5694 mL	15.1389 mL
10 mM	0.7569 mL	3.7847 mL	7.5694 mL
50 mM	0.1514 mL	0.7569 mL	1.5139 mL

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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

Bishop FS, et al. Glutaric aciduria type 1 presenting as bilateral subdural hematomas mimicking nonaccidental trauma. Case report and review of the literature. J Neurosurg. 2007 Mar;106(3 Suppl):222-6.

de Oliveira Marques F, et al. acid induces oxidative stress in brain of young rats. Brain Res. 2003 Feb 21;964(1):153-8.

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