

## Methionine

## Chemical Properties

CAS No. : 348-67-4

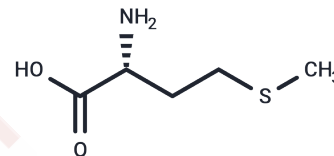
Formula: C<sub>5</sub>H<sub>11</sub>NO<sub>2</sub>S

Molecular Weight: 149.21

Keep away from moisture

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	Methionine (D-Methionine) (MRX-1024; D-Methionine) is an effective chemoprotective agent which can also inhibit the neuronal activity through GABAA receptor activation.
Targets(IC50)	GABA Receptor,Endogenous Metabolite
In vitro	When human plasma is incubated with Methionine (D-methionine) and CP, a Pt-D-methionine complex forms, regardless of the sequence in which they are added. Initially, an early CP hydrolysis product combines with Methionine to create a 1:1 complex, which subsequently leads to a 2:1 compound over time. These Pt-D-methionine compounds are crucial in how Methionine shields mammalian organisms from CP-induced toxicities[2].
In vivo	Administration of Methionine (D-methionine) concurrently with cisplatin results in a cell density of 0.8±0.070 (SEM), which is significantly higher than that observed in rats receiving cisplatin alone (P0.01), yet comparable to control groups and those treated with D-methionine only (P>0.05). Solo administration of Methionine yields an average cell density of 0.95±0.099 (SEM), also showing no significant difference from controls (P>0.05)[3].

## Solubility Information

Solubility	H <sub>2</sub> O: 15.7 mg/mL (105.22 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	6.702 mL	33.5098 mL	67.0196 mL
5 mM	1.3404 mL	6.702 mL	13.4039 mL
10 mM	0.6702 mL	3.351 mL	6.702 mL
50 mM	0.134 mL	0.6702 mL	1.3404 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

Wu C, et al. Antioxidants L-carnitine and D-methionine modulate neuronal activity through GABAergic inhibition. *J Neural Transm (Vienna)*. 2014 Jul;121(7):683-93.

Sooriyaarachchi M, et al. Chemoprotection by D-methionine against cisplatin-induced side-effects: insight from in vitro studies using human plasma. *Metallomics*. 2014 Mar;6(3):532-41.

Hinduja S, et al. D-methionine protects against cisplatin-induced neurotoxicity in the hippocampus of the adult rat. *Neurotox Res*. 2015 Apr;27(3):199-204.

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