

## S-Adenosyl-L-methionine disulfate tosylate

### Chemical Properties

CAS No. : 97540-22-2

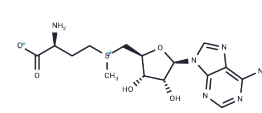
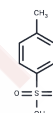
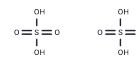
Formula: C<sub>22</sub>H<sub>34</sub>N<sub>6</sub>O<sub>16</sub>S<sub>4</sub>

Molecular Weight: 766.8

Storage: year

Pure form: -20°C for 3 years | In solvent: -80°C for 1

Actual storage temperature shall be subject to the COA.



### Biological Description

Description	S-Adenosyl-L-methionine disulfate tosylate is a methyl donor with oral activity. S-Adenosyl-L-methionine disulfate tosylate is a dietary supplement with effective antidepressant and pain-relieving effects. S-Adenosyl-L-methionine disulfate tosylate also has anti-proliferative, pro-apoptotic and anti-metastatic effects in cancer. S-Adenosyl-L-methionine can be used in the research of liver diseases and osteoarthritis.
Targets(IC50)	Apoptosis, Endogenous Metabolite, DNA/RNA Synthesis
In vitro	<p><b>METHODS:</b> Cal-33 and JHU-SCC-011 cells were treated with S-Adenosyl-L-methionine disulfate tosylate (300 μM) for 24 or 48 hours. Apoptosis and cell cycle were detected by flow cytometry. Cell migration was detected using the Scratch-wound assay.</p> <p><b>RESULTS:</b> S-Adenosyl-L-methionine disulfate tosylate induces apoptosis and promotes cell cycle arrest in Cal-33 and JHU-SCC-011 cells, reducing the migration of Cal-33 and JHU-SCC-011 cells. [1]</p> <p><b>METHODS:</b> Human A549 lung cancer cells were treated with S-Adenosyl-L-methionine disulfate tosylate (5-40 μg/mL) for 48 hours, and the DNMTs protein level was detected by Western Blot method.</p> <p><b>RESULTS:</b> S-Adenosyl-L-methionine disulfate tosylate protects the anti-cancer effect of 5-FU by regulating the expression of DNMTs. [2]</p>
In vivo	<p><b>METHODS:</b> To investigate the effect of S-Adenosyl-L-methionine disulfate tosylate on ASD, S-Adenosyl-L-methionine disulfate tosylate (30 mg/kg) was administered orally to young rats for 3 days.</p> <p><b>RESULTS:</b> S-Adenosyl-L-methionine disulfate tosylate could prevent ASD-like behaviors induced by valproic acid exposure early after birth in young rats. [3]</p> <p><b>METHODS:</b> To study the antiepileptic effect of S-Adenosyl-L-methionine disulfate tosylate, S-Adenosyl-L-methionine disulfate tosylate (50 mg/kg, 100 mg/kg) was orally administered to pentylenetetrazole-induced epilepsy rats.</p> <p><b>RESULTS:</b> S-Adenosyl-L-methionine disulfate tosylate exhibited antiepileptic, memory enhancement and antioxidant properties in pentylenetetrazole-induced epilepsy rats. [4]</p>

### Solubility Information

## A DRUG SCREENING EXPERT

Solubility	Ethanol: < 1 mg/mL (insoluble or slightly soluble), H2O: 72 mg/mL (93.9 mM),Sonication is recommended. DMSO: 247.5 mg/mL (322.77 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 (6.52 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	1.3041 mL	6.5206 mL	13.0412 mL
5 mM	0.2608 mL	1.3041 mL	2.6082 mL
10 mM	0.1304 mL	0.6521 mL	1.3041 mL
50 mM	0.0261 mL	0.1304 mL	0.2608 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

Mosca L, et al. Effects of S-adenosyl-L-methionine on the invasion and migration of head and neck squamous cancer cells and analysis of the underlying mechanisms. *Int J Oncol.* 2020 May;56(5):1212-1224.

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Ham MS, et al. S-adenosyl methionine specifically protects the anticancer effect of 5-FU via DNMTs expression in human A549 lung cancer cells. *Mol Clin Oncol.* 2013 Mar;1(2):373-378.

Ornoy A, et al. S-adenosyl methionine prevents ASD like behaviors triggered by early postnatal valproic acid exposure in very young mice. *Neurotoxicol Teratol.* 2019 Jan-Feb;71:64-74.

Dhediya RM, et al. Evaluation of antiepileptic effect of S-adenosyl methionine and its role in memory impairment in pentylenetetrazole-induced kindling model in rats. *Epilepsy Behav.* 2016 Aug;61:153-157.

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