

MEG hemisulfate

Chemical Properties

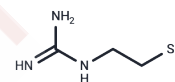
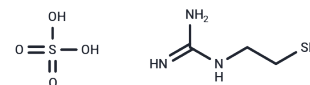
CAS No. : 3979-00-8

Formula: C₆H₂₀N₆O₄S₃

Molecular Weight: 336.44

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

Actual storage temperature shall be subject to the COA.



Biological Description

Description	MEG hemisulfate (Mercaptoethylguanidine hemisulfate) acts as a highly potent and selective suppressor of inducible NO synthase (iNOS), demonstrating EC ₅₀ values of 11.5 μM for iNOS, 110 μM for ecNOS, and 60 μM for bNOS in tissue homogenates. It is notably effective as a peroxynitrite scavenger and blocks peroxynitrite-triggered oxidative mechanisms. Furthermore, this compound offers protective benefits across various experimental inflammation prototypes, such as ischemia/reperfusion injury, hemorrhagic shock, periodontitis, inflammatory bowel disease, and both endotoxic and septic shock.
Targets(IC50)	NOS,NO Synthase
In vitro	MEG, administered in various concentrations (0.1-1000 μM for 18 hours), reduces nitrite accumulation in the supernatant of LPS (10 μg/mL) and INF (50 μg/mL) activated J774.2 macrophages, while also inhibiting iNOS activity in lung homogenates from LPS-treated rats. Additionally, MEG effectively inhibits peroxynitrite-induced oxidative processes, including the oxidation of cytochrome c ²⁺ and hydroxylation of benzoate, across a range of concentrations (1 μM-3 mM over 3 minutes). It also protects against the suppression of mitochondrial respiration and DNA single strand breakage in J774 cells, and the impairment of vascular contractility in thoracic aortic rings, suggesting broad protective effects against peroxynitrite-induced damage.
In vivo	MEG (30-60 mg/kg; a single i.p.) decreases mean arterial blood pressure (MAP) of normal rats[1]. MEG (10 mg/kg; i.p. for 5 d) attenuates the degree of lipid peroxidation, protein oxidation, and peroxynitrites level and ameliorated the decrease of antioxidant enzymes activities in the esophagus of rats subjected to caustic burn injury[3]. MEG (10 mg/kg; a single i.p.) improves the renal dysfunction and tissue injury induced by ischemia/reperfusion (I/R) of rat kidney[4].

Solubility Information

Solubility	DMSO: 45 mg/mL (133.75 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
------------	--------------------------------------------------------------------------------------------------------------------------

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.9723 mL	14.8615 mL	29.723 mL
5 mM	0.5945 mL	2.9723 mL	5.9446 mL
10 mM	0.2972 mL	1.4861 mL	2.9723 mL
50 mM	0.0594 mL	0.2972 mL	0.5945 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

Southan GJ, et, al. Spontaneous rearrangement of aminoalkylisothioureas into mercaptoalkylguanidines, a novel class of nitric oxide synthase inhibitors with selectivity towards the inducible isoform. *Br J Pharmacol.* 1996 Feb;117(4):619-32.

Szabó C, et, al. Mercaptoethylguanidine and guanidine inhibitors of nitric-oxide synthase react with peroxynitrite and protect against peroxynitrite-induced oxidative damage. *J Biol Chem.* 1997 Apr 4;272(14):9030-6.

Guyen A, et, al. Mercaptoethylguanidine attenuates caustic esophageal injury in rats: a role for scavenging of peroxynitrite. *J Pediatr Surg.* 2011 Sep;46(9):1746-52.

Guyen A, et, al. Scavenging of peroxynitrite reduces renal ischemia/reperfusion injury. *Ren Fail.* 2008;30(7):747-54.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481