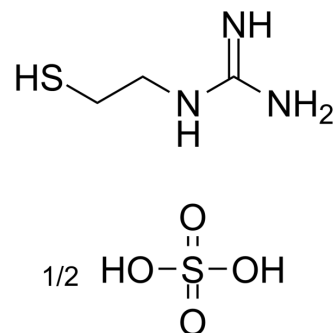


## MEG hemisulfate

Cat. No.:	HY-138454
CAS No.:	3979-00-8
Molecular Formula:	C <sub>3</sub> H <sub>9</sub> N <sub>3</sub> S.1/2H <sub>2</sub> O <sub>4</sub> S
Molecular Weight:	168.23
Target:	NO Synthase
Pathway:	Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	MEG (Mercaptoethylguanidine) hemisulfate is a potent and selective inhibitor of the inducible NO synthase (iNOS), with EC <sub>50</sub> s of 11.5, 110, and 60 μM for iNOS, ecNOS, and bNOS respectively in tissue homogenates. MEG hemisulfate is also a potent scavenger of peroxynitrite and inhibits peroxynitrite-induced oxidative processes. MEG hemisulfate has a protective effect in many experimental models of inflammation, including ischemia/reperfusion injury, periodontitis, hemorrhagic shock, inflammatory bowel disease, and endotoxic and septic shock <sup>[1][2][3][4]</sup> .								
<b>IC<sub>50</sub> &amp; Target</b>	IC <sub>50</sub> : 11.5 μM (iNOS), 110 μM (ecNOS), 60 μM (bNOS) <sup>[1]</sup>								
<b>In Vitro</b>	<p>MEG (0.1-1000 μM; 18 h) reduces nitrite accumulation in the supernatant of cultured J774.2 macrophages activated with LPS (10 μg/mL) and INF (50 μg/mL). MEG inhibits iNOS activity in homogenates of lungs taken from LPS-treated rats<sup>[1]</sup>.</p> <p>MEG (1 μM-3 mM; 3 min) dose-dependently inhibits the peroxynitrite-induced oxidation of cytochrome c<sup>2+</sup> and hydroxylation of benzoate<sup>[2]</sup>.</p> <p>MEG (1-300 μM) inhibits the suppression of mitochondrial respiration and DNA single strand breakage in response to peroxynitrite in J774 cells<sup>[2]</sup>.</p> <p>MEG (300 μM; 30 min) inhibits the suppression of vascular contractility in response to peroxynitrite in thoracic aortic rings<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
<b>In Vivo</b>	<p>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<sup>[3]</sup>.</p> <p>MEG (30-60 mg/kg; a single i.p.) decreases mean arterial blood pressure (MAP) of normal rats<sup>[1]</sup>.</p> <p>MEG (10 mg/kg; a single i.p.) improves the renal dysfunction and tissue injury induced by ischemia/reperfusion (I/R) of rat kidney<sup>[4]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" data-bbox="341 1638 1510 1953"> <tr> <td>Animal Model:</td> <td>Sprague-Dawley rats (200-250 g) were injured the esophagus<sup>[3]</sup></td> </tr> <tr> <td>Dosage:</td> <td>10 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>i.p. for 5 days</td> </tr> <tr> <td>Result:</td> <td>Reduced the stenosis index (SI) and the histopathologic damage score. Decreased the malondialdehyde and protein carbonyl content and increased the activities of superoxide dismutase and glutathione peroxidase.</td> </tr> </table>	Animal Model:	Sprague-Dawley rats (200-250 g) were injured the esophagus <sup>[3]</sup>	Dosage:	10 mg/kg	Administration:	i.p. for 5 days	Result:	Reduced the stenosis index (SI) and the histopathologic damage score. Decreased the malondialdehyde and protein carbonyl content and increased the activities of superoxide dismutase and glutathione peroxidase.
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Regulated the nitrate and nitrite level.

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## REFERENCES

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- [1]. Southan GJ, et, al. Spontaneous rearrangement of aminoalkylisothiouras 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.
- [2]. 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.
- [3]. Guven 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.
- [4]. Guven A, et, al. Scavenging of peroxynitrite reduces renal ischemia/reperfusion injury. *Ren Fail.* 2008;30(7):747-54.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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