S-Methylisothiourea sulfate

Cat. No.: HY-79457

CAS No.: 867-44-7

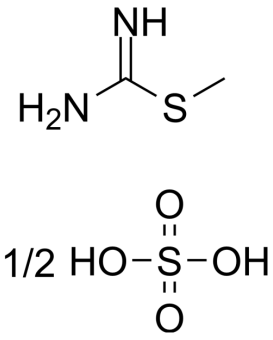
Molecular Formula: $C_2H_6N_2S.1/2H_2O_4S$

Molecular Weight: 139.18

Target: NO Synthase; HSV

Pathway: Immunology/Inflammation; Anti-infection

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 65 mg/mL (467.02 mM; Need ultrasonic)
DMSO : < 1 mg/mL (insoluble or slightly soluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	7.1849 mL	35.9247 mL	71.8494 mL
5 mM	1.4370 mL	7.1849 mL	14.3699 mL
10 mM	0.7185 mL	3.5925 mL	7.1849 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
Solubility: 50 mg/mL (359.25 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

S-Methylisothiourea sulfate is a potent, selective and competitive inhibitor of inducible nitric oxide synthase (iNOS). S-Methylisothiourea sulfate exerts beneficial effects in rodent models of septic shock[1].

IC_{50} & Target

iNOS

In Vitro

S-Methylisothiourea sulfate is a competitive inhibitor of iNOS activity at the L-arginine site[1].
?S-Methylisothiourea sulfate prevents the NO-mediated cytotoxic effect of LPS in cultured macrophages[1].
?S-Methylisothiourea sulfate (100 nM-100 μM) exhibits inhibitory effects on LPS (ug/mL)-induced nitrite production in J774.2 macrophages and rat aortic vascular smooth muscle cells[1].
?S-Methylisothiourea sulfate (up to 1 mM) does not inhibit the activity of xanthine oxidase, diaphorase, lactate dehydrogenase, monoamine oxidase, catalase, cytochrome P450, or superoxide dismutase[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

S-Methylisothiourea sulfate (0.01-3 mg/kg; i.v.) dose-dependently reverses the hypotension and the vascular hyporeactivity to vasoconstrictor agents caused by endotoxin LPS in anesthetized rats[1].

?S-Methylisothiourea sulfate (5 mg/kg; i.p.; given 2 hr after LPS; 10 mg/kg; i.p.) attenuates the rises in plasma alanine and aspartate aminotransferases, bilirubin, and creatinine and also prevents hypocalcaemia when measured 6 hr after administration of LPS[1].

?S-Methylisothiourea sulfate (1 mg/kg; i.p.) improves 24-hr survival of mice treated with a high dose of LPS (60 mg/kg; i.p.)[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wistar rats (260-320 g)[1]
Dosage:	0.01 mg/kg, 0.1 mg/kg, 1 mg/kg, 3 mg/kg
Administration:	Intravenous injection
Result:	Caused a prompt restoration of the blood pressure to pre-LPS levels at 3 mg/kg dose in LPS (10 mg/kg, i.v.)-treated rats; Inhibited iNOS activity measured in homogenates of lung.

CUSTOMER VALIDATION

- Inflammation. 2021 Nov 10.

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REFERENCES

[1]. C Szabó, et al. Beneficial effects and improved survival in rodent models of septic shock with S-methylisothiourea sulfate, a potent and selective inhibitor of inducible nitric oxide synthase. Proc Natl Acad Sci U S A. 1994 Dec 20; 91(26): 12472-12476.

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