L-Cysteine methyl ester hydrochloride

Cat. No.: HY-B1038

CAS No.: 18598-63-5

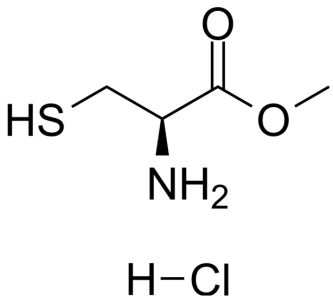
Molecular Formula: $C_4H_{10}ClNO_2S$

Molecular Weight: 171.65

Target: Others

Pathway: Others

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

DMSO : 100 mg/mL (582.58 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	5.8258 mL	29.1290 mL	58.2581 mL
	5 mM	1.1652 mL	5.8258 mL	11.6516 mL
	10 mM	0.5826 mL	2.9129 mL	5.8258 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (14.56 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (14.56 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (14.56 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

L-Cysteine methyl ester hydrochloride is an antitussive, phlegmolytic agent used to relieve breathing difficulties caused by large amounts of phlegm. L-Cysteine methyl ester hydrochloride is a copper corrosion inhibitor used in various industrial studies[1][2][3].

In Vitro

L-Cysteine methyl ester hydrochloride (100 nM-100 μM) stimulates the secretory activity of trachea secretory cells, while high concentration stimulates the synthesis of mucinous glycoprotein in submucosal glands. It has an obvious viscosity-reducing effect on secretory cell mucous[2].

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

In Vivo

L-Cysteine methyl ester hydrochloride (500 μmol/kg, intravenous injection) can effectively overcome the harmful effects of morphine on respiration and gas exchange in Sprague Dawley rats without affecting the sedative or early anti-sensory effects of opioids[3].

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

Animal Model:	Sprague Dawley rat model[3]
Dosage:	500 μmol/kg
Administration:	10 mg/kg morphine i.v.,15 min later,500 μmol/kg L-CYSme and repeat after 15 min later.
Result:	Overcome the adverse effects of morphine on breathing, A-a gradient, and ABG chemistry in unanesthetized rats.

REFERENCES

[1]. Zarrouk A, et al. Temperature effect, activation energies and thermodynamic adsorption studies of L-cysteine methyl ester hydrochloride as copper corrosion inhibitor in nitric acid 2M. Int. J. Electrochem. Sci, 2011, 6(12): 6261-6274..

[2]. Yanaura S, et al. Behavior of mucus glycoproteins of tracheal secretory cells following L-cysteine methyl ester treatment. J Pharmacobiodyn. 1982 Aug;5(8):603-10.

[3]. Getsy PM, et al. L-cysteine methyl ester overcomes the deleterious effects of morphine on ventilatory parameters and arterial blood-gas chemistry in unanesthetized rats. Front Pharmacol. 2022 Sep 28;13:968378.

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