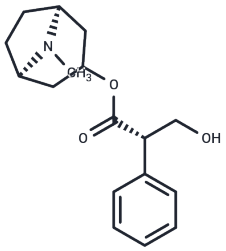
Data Sheet (Cat.No.T0962)

TargetMol

L-Hyoscyamine

Chemical Properties



CAS No. : 101-31-5

Formula: C17H23NO3

Molecular Weight: 289.37

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	L-Hyoscyamine (Daturine) functions as a non-selective, competitive antagonist of muscarinic receptors, thereby inhibiting the parasympathetic activities of acetylcholine on the salivary, bronchial, and sweat glands, as well as the eye, heart, bladder, and gastrointestinal tract. Hyoscyamine is a belladonna alkaloid derivative and the levorotatory form of racemic atropine isolated from the plants Hyoscyamus niger or Atropa belladonna, which exhibits anticholinergic activity. These inhibitory effects cause a decrease in saliva, bronchial mucus, gastric juices, and sweat. Furthermore, its inhibitory action on smooth muscle prevents bladder contraction and decreases gastrointestinal motility.
Targets(IC50)	AChR
In vitro	In vivo studies with conscious rats demonstrated that L-hyoscyamine (20 mg/kg) extended the cyclic period of migrating myoelectric complexes from 17.6 minutes to 29.0 minutes.
In vivo	In CHO cells, L-hyoscyamine inhibits excitant-induced cAMP production (EC50: 7.8 nM). In murine cardiac (atrial and ventricular) membranes, S-(-)-hyoscyamine enhances cyclic AMP synthesis stimulated by pilocarpine by 24%. R-(+)-hyoscyamine competes with [3H]NMS for binding to muscarinic acetylcholine receptor subtypes (m1-m5), with pKi values of 8.67, 8.51, 7.46, 8.56, and 8.53, respectively. L-hyoscyamine increases the TPase activity turnover rate from 0.19/min to 2.11/min in steady-state kinetic measurements.

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 122.5 mg/mL (423.33 mM),Sonication is recommended. Ethanol: 54 mg/mL (186.61 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: 2 mg/mL (6.91 mM),Sonication is recommended. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.4558 mL	17.2789 mL	34.5578 mL
5 mM	0.6912 mL	3.4558 mL	6.9116 mL
10 mM	0.3456 mL	1.7279 mL	3.4558 mL
50 mM	0.0691 mL	0.3456 mL	0.6912 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

Schmeller T, et al. Pharmazie, 1995, 50(7), 493-495.
Tota MR, et al. Biochemistry, 1987, 26(25), 8175-8182.
Dong GZ, et al. J Pharmacol Exp Ther, 1995, 274(1), 378-384.
Vogel WK, et al. J Biol Chem, 1995, 270(26), 15485-15493.
Rícný J, et al. Physiol Res. 2002;51(2):131-7.