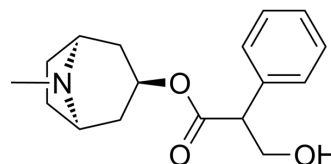


Atropine

Cat. No.:	HY-B1205
CAS No.:	51-55-8
Molecular Formula:	C ₁₇ H ₂₃ NO ₃
Molecular Weight:	289.37
Target:	mAChR; Endogenous Metabolite
Pathway:	GPCR/G Protein; Neuronal Signaling; Metabolic Enzyme/Protease
Storage:	-20°C, stored under nitrogen * In solvent : -80°C, 1 year; -20°C, 6 months (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 96.6 mg/mL (333.83 mM)
 H₂O : 2.9 mg/mL (10.02 mM; Need ultrasonic and warming)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
		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		

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.08 mg/mL (7.19 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (7.19 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (7.19 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Atropine (Tropine tropate) is a competitive muscarinic acetylcholine receptor (mAChR) antagonist with IC₅₀ values of 0.39 and 0.71 nM for Human mAChR M₄ and Chicken mAChR M₄, respectively. Atropine inhibits ACh-induced relaxations in human pulmonary veins. Atropine can be used for research of anti-myopia and bradycardia^{[1][2][3][4]}.

IC₅₀ & Target

mAChR4

In Vitro

Atropine (Tropine tropate; 1 μM; pulmonary veins and arteries) inhibits ACh-induced relaxations in human pulmonary veins

[4].

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

In Vivo

Atropine (Tropine tropate; 10 mg/kg; i.p.; once, for 40 minutes; Peromyscus sp.) inhibits the cardiac arrhythmia which normally occurs throughout torpor^[2].

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

Animal Model:	White-footed mice (Peromyscus sp.) ^[2]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection; once, for 40 minutes
Result:	Increased heart rate was a decrease in cardiac arrhythmia.

CUSTOMER VALIDATION

- Cell Discov. 2023 Feb 7;9(1):16.
- Cell Metab. 2022 Nov 11;S1550-4131(22)00490-9.
- Neuron. 2022 Sep 14;S0896-6273(22)00796-6.
- J Hazard Mater. 2023 Dec 14, 133248.
- Food Chem. 30 November 2022, 133593.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. McBrien NA, et, al. How does atropine exert its anti-myopia effects? Ophthalmic Physiol Opt. 2013 May;33(3):373-8.

[2]. Morhardt JE. Heart rates, breathing rates and the effects of atropine and acetylcholine on white-footed mice (Peromyscus sp.) during daily torpor. Comp Biochem Physiol. 1970 Mar 15;33(2):441-57.

[3]. Carr BJ, et, al. Myopia-Inhibiting Concentrations of Muscarinic Receptor Antagonists Block Activation of Alpha2A-Adrenoceptors In Vitro. Invest Ophthalmol Vis Sci. 2018 Jun 1;59(7):2778-2791.

[4]. Walch L, et, al. Evidence for a M(1) muscarinic receptor on the endothelium of human pulmonary veins. Br J Pharmacol. 2000 May;130(1):73-8.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA