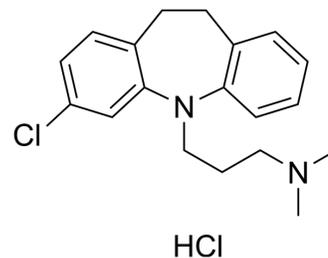


Clomipramine hydrochloride

Cat. No.:	HY-B0457
CAS No.:	17321-77-6
Molecular Formula:	C ₁₉ H ₂₄ Cl ₂ N ₂
Molecular Weight:	351.31
Target:	Serotonin Transporter
Pathway:	Neuronal Signaling
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 : 50 mg/mL (142.32 mM; Need ultrasonic)
 H₂O : ≥ 50 mg/mL (142.32 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.8465 mL	14.2324 mL	28.4649 mL
	5 mM	0.5693 mL	2.8465 mL	5.6930 mL
	10 mM	0.2846 mL	1.4232 mL	2.8465 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 100 mg/mL (284.65 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 3 mg/mL (8.54 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 3 mg/mL (8.54 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 3 mg/mL (8.54 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Clomipramine (Chlorimipramine) hydrochloride is a potent 5-HT reuptake blocker with the IC₅₀ value of 1.5 nM. Clomipramine hydrochloride is a tricyclic antidepressant that can be used for the research of depression and obsessive compulsive disorder (OCD)^[1].

In Vitro

Clomipramine hydrochloride can inhibit reuptake of both noradrenaline and 5-HT, although Clomipramine inhibits 5-HT

reuptake more strongly than it inhibits noradrenaline reuptake^[1].
 The antidepressant Clomipramine inhibits both venom AChE as well as human serum BChE in a concentration-dependent manner but has no effect on AChE in the rat brain striatum^[2].
 Clomipramine hydrochloride interferes with the autophagic flux and severely compromises the viability of tumorigenic cells upon cytotoxic stress^[3].
 Clomipramine hydrochloride reduces autophagy in neuronal primary cultures. Clomipramine (1 and 5 μ M) hydrochloride negatively regulates neuronal autophagic pathway in primary cultured cells^[3].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.
 Western Blot Analysis^[3]

Cell Line:	Primary cortical neurons
Concentration:	1 and 5 μ M
Incubation Time:	12, 24 and 48 hours
Result:	Enhanced the LC3-I conversion to LC3-II in a concentration-dependent manner at all analyzed time points.

In Vivo

Clomipramine (5-20 mg/kg; i.p) hydrochloride elicits significant hyperglycemia in mice. Clomipramine hydrochloride induces hyperglycemia in mice by blocking the 5-HT_{2B} and/or 5-HT_{2C} receptors, which results in facilitation of adrenaline release. In mice, Clomipramine hydrochloride reduces immobility in the forced swimming test, which is the behavioral model for antidepressants. Clomipramine hydrochloride also inhibits the OCD animal model, marble burying behavior in mice^[1].
 Clomipramine (20 mg/kg) hydrochloride decreases autophagic flux in murine tissues^[3].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 J mice (6 weeks of age and 22 to 25 g) ^[3]
Dosage:	20 mg/kg
Administration:	Treated intraperitoneally for 21 days
Result:	Both LC3-II and p62 were significantly increased in the liver of Clomipramine treated mice compared to vehicle treated ones.

CUSTOMER VALIDATION

- Cell Commun Signal. 2023 May 25;21(1):123.

See more customer validations on www.MedChemExpress.com

REFERENCES

- [1]. Yumi Sugimoto, et al. The tricyclic antidepressant Clomipramine increases plasma glucose levels of mice. J Pharmacol Sci. 2003 Sep;93(1):74-9.
- [2]. Mushtaq Ahmed, et al. Comparative study of the inhibitory effect of antidepressants on cholinesterase activity in Bungarus sindanus (krait) venom, human serum and rat striatum. J Enzyme Inhib Med Chem. 2008 Dec;23(6):912-7.
- [3]. Federica Cavaliere, The tricyclic antidepressant Clomipramine inhibits neuronal autophagic flux. Sci Rep. 2019 Mar 19;9(1):4881.

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