Cyclobenzaprine hydrochloride

Cat. No.: HY-B0740

CAS No.: 6202-23-9

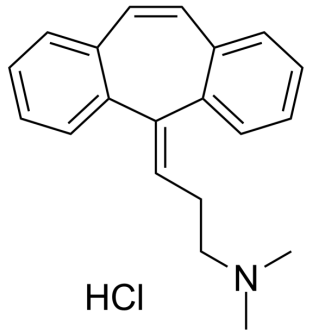
Molecular Formula: $C_{20}H_{22}ClN$

Molecular Weight: 311.85

Target: 5-HT Receptor

Pathway: GPCR/G Protein; 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

H_2O : ≥ 100 mg/mL (320.67 mM)
DMSO : 50 mg/mL (160.33 mM; Need ultrasonic)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.2067 mL	16.0333 mL	32.0667 mL
5 mM	0.6413 mL	3.2067 mL	6.4133 mL
10 mM	0.3207 mL	1.6033 mL	3.2067 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 110 mg/mL (352.73 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.02 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.02 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.02 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Cyclobenzaprine hydrochloride (MK130 hydrochloride) is a skeletal muscle relaxant and a central nervous system (CNS) depressant.Target: 5-HT Receptor 2ACyclobenzaprine hydrochloride is a skeletal muscle relaxant and a central nervous system (CNS) depressant. Cyclobenzaprine hydrochloride was thought to be an alpha 2-adrenoceptor agonist that reduced muscle tone by decreasing the activity of descending noradrenergic neurons. Cyclobenzaprine hydrochloride reduced the monosynaptic reflex amplitude dose dependently and this effect was not inhibited by the alpha 2-adrenoceptor antagonists

idazoxan and yohimbine. Cyclobenzaprine-induced monosynaptic reflex depression was not attenuated by noradrenergic neuronal lesions produced by 6-hydroxydopamine. Cyclobenzaprine hydrochloride is a 5-HT2 receptor antagonist and that its muscle relaxant effect is due to inhibition of serotonergic, not noradrenergic, descending systems in the spinal cord [1]. The inhibitory effects of Cyclobenzaprine hydrochloride on mono- and polysynaptic reflex potentials are due to the inhibition of descending serotonergic systems through 5-HT(2) receptors in the spinal cord [2].

REFERENCES

[1]. Kobayashi, H., Y. Hasegawa, and H. Ono, Cyclobenzaprine, a centrally acting muscle relaxant, acts on descending serotonergic systems. Eur J Pharmacol, 1996. 311(1): p. 29-35.

[2]. Honda, M., T. Nishida, and H. Ono, Tricyclic analogs cyclobenzaprine, amitriptyline and cyproheptadine inhibit the spinal reflex transmission through 5-HT(2) receptors. Eur J Pharmacol, 2003. 458(1-2): p. 91-9.

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