Tipepidine hydrochloride

Cat. No.: HY-121685A

CAS No.: 1449686-84-3

Molecular Formula: $C_{15}H_{18}ClNS_2$

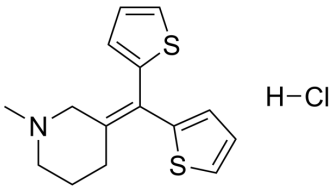
Molecular Weight: 311.89

Target: Potassium Channel

Pathway: Membrane Transporter/Ion Channel

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 : 41.67 mg/mL (133.60 mM; Need ultrasonic)

H_2O : 3.33 mg/mL (10.68 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.2063 mL	16.0313 mL	32.0626 mL
5 mM	0.6413 mL	3.2063 mL	6.4125 mL
10 mM	0.3206 mL	1.6031 mL	3.2063 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 33.33 mg/mL (106.86 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (6.67 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.67 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.67 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tipepidine hydrochloride reversibly inhibits dopamine (DA) D_2 receptor-mediated GIRK currents ($I_{DA(GIRK)}$) with an IC_{50} of 7.0 μM. Tipepidine hydrochloride subsequently activates VTA dopamine neuron[1]. Tipepidine hydrochloride, a non-narcotic antitussive, exerts an antidepressant-like effect[2].

IC_{50} & Target

IC50: 7.0 μM (dopamine D_2 receptor)[1]

In Vivo

Tipepidine (i.p.; 10-40 mg/kg; 0.5-23 hours) significantly decreases the immobility time in the forced swimming test in ACTH-treated rats. Tipepidine (i.p.; 40 mg/kg) increases the extracellular dopamine level of the nucleus accumbens (NAc) in ACTH-treated rats[2].

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

Animal Model:	Male Wistar rats weighting 150-240 g (5-7 weeks old) [2]
Dosage:	10, 20 and 40 mg/kg
Administration:	I.p.; 0.5, 5, 23 hours
Result:	Decreased the immobility time in the forced swimming test in ACTH-treated rats.

REFERENCES

[1]. Hamasaki R, et al. Tipepidine activates VTA dopamine neuron via inhibiting dopamine D_2 receptor-mediated inward rectifying K⊠ current. Neuroscience. 2013 Nov 12;252:24-34.

[2]. Kawaura K, et al. Tipepidine, a non-narcotic antitussive, exerts an antidepressant-like effect in the forced swimming test in adrenocorticotropic hormone-treated rats. Behav Brain Res. 2016 Apr 1;302:269-78.

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