Isoxsuprine hydrochloride

Cat. No.: HY-B1270

CAS No.: 579-56-6

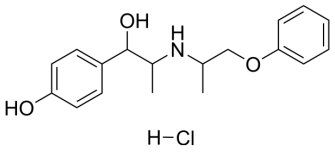
Molecular Formula: $C_{18}H_{24}ClNO_3$

Molecular Weight: 337.84

Target: Adrenergic Receptor; iGluR

Pathway: GPCR/G Protein; Neuronal Signaling; 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 : 140 mg/mL (414.40 mM; Need ultrasonic)
H_2O : 15.56 mg/mL (46.06 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9600 mL	14.7999 mL	29.5998 mL
5 mM	0.5920 mL	2.9600 mL	5.9200 mL
10 mM	0.2960 mL	1.4800 mL	2.9600 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 3.5 mg/mL (10.36 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 3.5 mg/mL (10.36 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3.5 mg/mL (10.36 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Isoxsuprine hydrochloride is a beta-adrenergic receptor agonist with K_is of 13.65 μM and 3.48 μM for myometrial and placcntal beta-adrenergic receptor, respectively. Isoxsuprine hydrochloride is also a NMDA receptor antagonist.

IC_{50} & Target

NMDA Receptor

In Vitro

Results show that Isoxsuprine hydrochloride inhibits circular chemorepellent induced defect (CCID) formation dose dependently (5 to 60 μM) and also inhibits 12(S)-HETE synthesis. Furthermore, Isoxsuprine hydrochloride is the only drug inhibiting the induction of all three mobility markers (MLC2, MYPT and paxillin)[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Total infarct volume in vehicle-treated animals is 279±25 mm^3 compare to 137±18 mm^3 in Isoxsuprine hydrochloride-treated animals[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	$MCF\text{-}7^{ALOX12}$ cells are seeded in 3.5-cm dishes and grown in 2.5 mL complete MEM medium without selection pressure. The next day, the medium is changed to serum-free medium and cells are kept at 37°C for 24 h. Then, cells are treated with 10 μM arachidonic acid and simultaneously with different concentrations of Isoxsuprine hydrochloride for 4 h when the supernatants are aspirated, centrifuged at 2000, r.p.m. at 4°C for 5 min, collected in cryo-tubes, flash frozen and stored at -80 °C until analysis[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [3]	Male spontaneously hypertensive rats (SHR) weighing 290 to 300 g are used in this study. At reperfusion, animals receive 0.5 mL of vehicle (0.6% DMSO in normal saline) or 1 mg/kg Isoxsuprine hydrochloride by intravenous (IV) injection through the lateral tail vein. All animals receive 3 mL of subcutaneous saline after surgery to prevent dehydration. After 24 hours reperfusion, animals are sacrificed, brains are sectioned into 4 mm-thick quadrants, and infarcted tissue is identified by 2,3,5-triphenyltetrazolium chloride (TTC) staining. Edema-corrected infarct volume is calculated by subtracting the area of non-infarcted tissue in the ipsilateral hemisphere from the total volume of the contralateral hemisphere. Infarct volume is quantified using Image J software[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Falkay G, et al. Affinity of tocolytic agents on human placental and myometrial beta-adrenergic receptors. J Perinat Med. 1986;14(2):109-13.

[2]. Kretschy N, et al. In vitro inhibition of breast cancer spheroid-induced lymphendothelial defects resembling intravasation into the lymphatic vasculature by acetohexamide, isoxsuprine, nifedipin and proadifen. Br J Cancer. 2013 Feb 19;108(3):570-8.

[3]. Hill JW, et al. Identification of isoxsuprine hydrochloride as a neuroprotectant in ischemic stroke through cell-based high-throughput screening. PLoS One. 2014 May 7;9(5):e96761.

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