Mesdopetam hemitartrate

Cat. No.: HY-109150A

CAS No.: 2562346-14-7

Molecular Formula: $C_{12}H_{18}FNO_3S.{}_1/_2C_4H_6O_6$

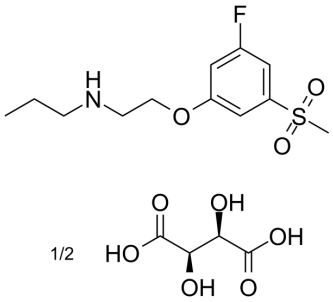
Molecular Weight: 700.77

Target: Dopamine 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 (142.70 mM; Need ultrasonic)

DMSO : 20.83 mg/mL (29.72 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.4270 mL	7.1350 mL	14.2700 mL
5 mM	0.2854 mL	1.4270 mL	2.8540 mL
10 mM	0.1427 mL	0.7135 mL	1.4270 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 16.67 mg/mL (23.79 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 (2.97 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (2.97 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (2.97 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mesdopetam (IRL790) hemitartrate is a dopamine D3 receptor antagonist (K_i=90 nM; IC_{50}=9.8 μM for human recombinant D3 receptor) with psychomotor stabilizing properties. Mesdopetam hemitartrate is used for the research of motor and psychiatric complications in Parkinson disease[1][2].

In Vivo

Mesdopetam (IRL790) (3.7, 11, 33, or 100 μmol/kg; s.c.) hemitartrate dose-dependently inhibits the behavioral activation following pretreatment with D-amphetamine or MK-80[1].

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

Animal Model:	Male Sprague-Dawley rats[1]
Dosage:	3.7, 11, 33, or 100 μmol/kg (synthesized in-house as HCl salt, was dissolved in physiologic saline (0.9% w/v NaCl)
Administration:	s.c. was administered subcutaneously 4 min before the start of recording
Result:	Dose-dependently inhibited the behavioral activation following pretreatment with D-amphetamine or MK-801.

REFERENCES

[1]. Waters S, et al. Preclinical Pharmacology of [2-(3-Fluoro-5-Methanesulfonyl-phenoxy)Ethyl](Propyl)amine (IRL790), a Novel Dopamine Transmission Modulator for the Treatment of Motor and Psychiatric Complications in Parkinson Disease. J Pharmacol Exp Ther.

[2]. Becanovic K, et al. Effects of a Novel Psychomotor Stabilizer, IRL790, on Biochemical Measures of Synaptic Markers and Neurotransmission. J Pharmacol Exp Ther. 2020;374(1):126-133.

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