MMPIP hydrochloride

Cat. No.: HY-103111

CAS No.: 1215566-78-1

Molecular Formula: $C_{19}H_{16}ClN_3O_3$

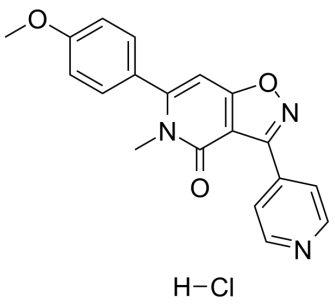
Molecular Weight: 369.8

Target: mGluR

Pathway: GPCR/G Protein; Neuronal Signaling

Storage: -20°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 : 10 mg/mL (27.04 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7042 mL	13.5208 mL	27.0416 mL
	5 mM	0.5408 mL	2.7042 mL	5.4083 mL
	10 mM	0.2704 mL	1.3521 mL	2.7042 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (2.70 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MMPIP hydrochloride is an allosteric metabotropic glutamate receptor 7 (mGluR7) selective antagonist (K_B values 24 -30 nM). MMPIP hydrochloride acts as a pharmacological tool for elucidating the roles of mGluR7 on central nervous system functions. MMPIP hydrochloride alleviates pain and normalizes affective and cognitive behavior in neuropathic mice[1][2].

IC_{50} & Target

mGlu7

In Vitro

MMPIP inhibits L-(+)-2-amino-4-phosphonobutyric acid (L-AP4; 0.5 mM)-induced intracellular Ca^{2+} mobilization in Chinese hamster ovary (CHO) cells coexpressing rat mGluR7 with $G_{\alpha 15}$ (IC_{50}=26 nM) [1].

In CHO cells expressing rat mGluR7, MMPIP inhibits L-AP4-induced inhibition of forskolin-stimulated cAMP accumulation (IC_{50} 220 nM)[1].

MMPIP also antagonizes L-AP4-induced inhibition of cAMP accumulation with an IC_{50} of 610 nM in CHO-human mGluR7/$G_{\alpha 15}$ [1].

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

In Vivo	MMPIP (10 mg/kg) attenuates the amplitude of the acoustic startle response and markedly enhances the prepulse-induced inhibition of the acoustic startle response (up to 137% of control)[2]. MMPIP (10 mg/kg) rescues the MK-801 (0.1 mg/kg)-induced cognitive impairments, by improving the choice accuracy[2]. Zamifenacin exhibits short elimination half-lives (plasma 1.16 h, brain 1.75 h) following i.p. administration (10 mg/kg) in mice[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Gentaroh Suzuki, et al. In vitro pharmacological characterization of novel isoxazolopyridone derivatives as allosteric metabotropic glutamate receptor 7 antagonists. J Pharmacol Exp Ther. 2007 Oct;323(1):147-56.

[2]. Paulina Cieślik, et al. Negative Allosteric Modulators of mGlu 7 Receptor as Putative Antipsychotic Drugs. Front Mol Neurosci. 2018 Sep 20;11:316.

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