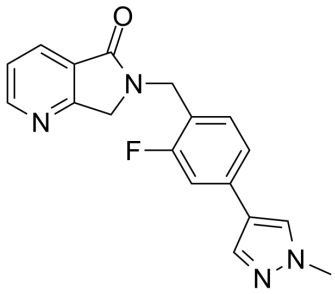
VU0453595

Cat. No.:	HY-120023
CAS No.:	1432436-13-9
Molecular Formula:	$C_{18}H_{15}FN_4O$
Molecular Weight:	322.34
Target:	mAChR
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (310.23 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.1023 mL	15.5116 mL	31.0231 mL
5 mM	0.6205 mL	3.1023 mL	6.2046 mL
10 mM	0.3102 mL	1.5512 mL	3.1023 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: ≥ 2.5 mg/mL (7.76 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.76 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

VU0453595 is a highly selective, systemically active M_1 positive allosteric modulator (PAM, EC_{50}=2140 nM) for the research of schizophrenia[1][2].

In Vitro

Application of M_1 PAM VU0453595 (3 μM) induces a transient increase in excitability of medium spiny neurons (MSNs)[3].

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

In Vivo

VU0453595 potentiates M_1-mediated muscarinic long-term depression (mLTD)[1].

VU0453595 (1-10 mg/kg; i.p.) reverses behavioral deficits induced by repeated phencyclidine (PCP) administration[1].

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

Animal Model:	Male C57BL6/J mice (8-9 weeks old)[1]
Dosage:	1, 3, or 10 mg/kg
Administration:	Intraperitoneal (i.p.); 10 mL/kg; administered 30 min before the social interaction test
Result:	Rescued deficits in social interaction observed in PCP-treated mice.

REFERENCES

[1]. A Ghoshal, et al. Potentiation of M_1 Muscarinic Receptor Reverses Plasticity Deficits and Negative and Cognitive Symptoms in a Schizophrenia Mouse Model. Neuropsychopharmacology. 2016 Jan;41(2):598-610.

[2]. Sean P Moran, et al. M_1-positive allosteric modulators lacking agonist activity provide the optimal profile for enhancing cognition. Neuropsychopharmacology. 2018 Jul;43(8):1763-1771.

[3]. Xiaohui Lv, et al. M_1 muscarinic activation induces long-lasting increase in intrinsic excitability of striatal projection neurons. Neuropharmacology. 2017 May 15;118:209-222.

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