ONO-8590580

Cat. No.: HY-112788

CAS No.: 1802661-73-9

Molecular Formula: $C_{21}H_{21}FN_6$

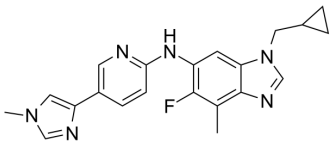
Molecular Weight: 376.43

Target: GABA Receptor

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (132.83 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6565 mL	13.2827 mL	26.5654 mL
	5 mM	0.5313 mL	2.6565 mL	5.3131 mL
	10 mM	0.2657 mL	1.3283 mL	2.6565 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: ≥ 2.08 mg/mL (5.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ONO-8590580 is a $GABA_A$ α5 negative allosteric modulator.

IC_{50} & Target

$GABA_A$ α5[1].

In Vivo

The effect of ONO-8590580 on the MK-801/scopolamine-induced cognitive deficit in the 8-arm radial maze test is investigated. Doses of MK-801 and scopolamine for this test are 0.075 mg/kg (i.p.) and 0.2 mg/kg (i.p.) respectively. ONO-8590580 (20 mg/kg, p.o.) significantly decreases the number of errors and total latency compared to the control. The present study in which ONO-8590580 but not donepezil significantly decreases the number of errors may suggest that ONO-8590580 could be more potent for the treatment of AD patients. The data showing that ONO-8590580 has not anxiogenic-like or proconvulsant effects are in agreement with the behavioral phenotype of α5-/- mice[1].

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

PROTOCOL

Animal Administration [1]

Rats[1]

Male Sprague-Dawley rats are used. ONO-8590580 is orally administered 1 h before sacrifice. [^{3}H]-Ro15-4513 (1.11 MBq/kg) is administered via the tail vein (1 mL/kg) 10 min before sacrifice. Rats (n=12 in each group) are given either vehicle, ONO-8590580 (20 mg/kg, p.o.), or as a positive control, the $GABA_A$ nonselective NAM FG-7142 (15 mg/kg, i.p.). After 1 h, rats are placed in the elevated plus maze for 5 min. Light intensity in the open arms is set at 20 lx. A video camera fitted with a polarizing lens is mounted above the maze, connected to a tracking and analyse system[1].

Mice[1]

Mice (n=8 in each group) are intraperitoneally administered with either vehicle, ONO-8590580 (10 mg/kg), or FG-7142 (10 mg/kg). After 30 min, the mice are infused with 15 mg/mL PTZ solution (infusion rate 0.2 mL/min), and the time taken to reveal clonic seizures is measured, and from this the dose administrated is calculated[1].

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

REFERENCES

[1]. Kawaharada S, et al. ONO-8590580, a Novel GABAAα5 Negative Allosteric Modulator Enhances Long-Term Potentiation and Improves Cognitive Deficits in Preclinical Models. J Pharmacol Exp Ther. 2018 Jul;366(1):58-65.

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