Osavampator

Cat. No.:	HY-115864
CAS No.:	1358751-06-0
Molecular Formula:	$C_{19}H_{23}N_3O_3S$
Molecular Weight:	373.47
Target:	iGluR; Lipoxygenase
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease
Storage:	4°C, sealed storage, away from moisture and light
	* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)
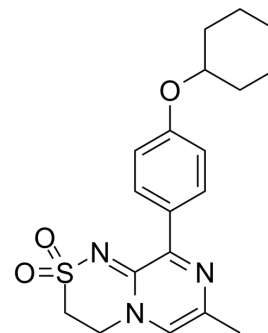
SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 12.5 mg/mL (33.47 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent Mass Concentration	1 mg	5 mg	10 mg
1 mM	2.6776 mL	13.3880 mL	26.7759 mL
5 mM	0.5355 mL	2.6776 mL	5.3552 mL
10 mM	0.2678 mL	1.3388 mL	2.6776 mL

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

BIOLOGICAL ACTIVITY

Description

Osavampator (TAK-653) is a AMPA receptor positive allosteric modulator. Osavampator selectively binds to AMPA-R in a glutamate-dependent manner and induces Ca^{2+} influx in hGluA1i CHO cells (EC_{50} = 3.3 μM). Osavampator improves learning and memory in many models. Osavampator is can be used for the research of depressive disorders[1][2].

IC_{50} & Target

5-LO

In Vivo

Osavampator (0.03-0.3 mg/kg, p.o., single dose) enhances visual learning and memory in normal rats[2].
Osavampator (0.3 mg/kg, p.o., single dose) enhances sustained attention in the poor performing rats[2].
Osavampator (0.06 mg/kg, p.o., single dose) improves working memory in monkeys[2].
Osavampator (1 mg/kg, p.o., single dose) produces antidepressant-like effects in the rat RSBM (reduction of submissive behavior model)[1].

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

Animal Model:	Normal rats[2]

Dosage:	0.03 mg/kg, 0.1 mg/kg, 0.3 mg/kg
Administration:	Oral gavage (p.o.)
Result:	Improved the novelty discrimination index (NDI).

Animal Model:	Poor performing rats[2]
Dosage:	0.3 mg/kg
Administration:	Oral gavage (p.o.)
Result:	Increased correct responses and decreased omissions in the poor performing rats.

Animal Model:	Fasted monkey[2]
Dosage:	0.06 mg/kg
Administration:	Oral gavage (p.o.)
Result:	Significantly increased delayed match-to-sample (DMTS) accuracy at a 16-s delay interval. Maintained the beneficial effect 24 h after administration.

Animal Model:	submissive behavior model [1]
Dosage:	0.1 mg/kg, 1 mg/kg
Administration:	Oral gavage (p.o.)
Result:	Led to a significant reduction in dominance levels compared with vehicle treatment starting from the seventh day of treatment and maintained throughout the study period. Had a significant effect in reducing dominance levels at 0.1 and 1 mg/kg.

REFERENCES

[1]. Hara H, et al. TAK-653, an AMPA receptor potentiator with minimal agonistic activity, produces an antidepressant-like effect with a favorable safety profile in rats [J]. Pharmacology Biochemistry and Behavior, 2021, 211: 173289.

[2]. Suzuki A, et al. Strictly regulated agonist-dependent activation of AMPA-R is the key characteristic of TAK-653 for robust synaptic responses and cognitive improvement [J]. Scientific Reports, 2021, 11(1): 14532.

[3]. Hara H, et al. TAK-653, an AMPA receptor potentiator with minimal agonistic activity, produces an antidepressant-like effect with a favorable safety profile in rats. Pharmacol Biochem Behav. 2021 Dec;211:173289.