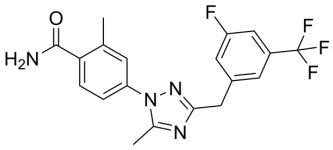
TP-024

Cat. No.:	HY-101787
CAS No.:	1358575-02-6
Molecular Formula:	$C_{19}H_{16}F_4N_4O$
Molecular Weight:	392
Target:	GPR52
Pathway:	GPCR/G Protein
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (127.55 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5510 mL	12.7551 mL	25.5102 mL
	5 mM	0.5102 mL	2.5510 mL	5.1020 mL
	10 mM	0.2551 mL	1.2755 mL	2.5510 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 (5.31 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.31 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

TP-024 (FTBMT) is a selective GPR52 agonist with an EC_{50} of 75 nM[1]. TP-024 has antipsychotic and procognitive properties [2].

IC_{50} & Target

IC50: 75 nM (GPR52)[1]

In Vitro

TP-024 (FTBMT) (0.1-10 μM) increases intracellular cAMP levels in CHO cells expressing human, mouse, or rat GPR52, with pEC_{50}s of 7.03, 6.85, and 6.87, respectively[2].

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

Cell Viability Assay[1]

Cell Line:	CHO cells (expressing GPR52 receptors) cAMP assay

Concentration:	0.1-10 μM
Incubation Time:	30 minutes
Result:	FTBMT activated cAMP signaling in vitro[1].

In Vivo

TP-024 (FTBMT) (30 mg/kg, 90 minutes) exhibits antipsychotic-like activity without causing catalepsy in mice[2].

TP-024 (3 or 10 mg/kg, 48 hours) improves recognition and spatial working memory in rats[2].

TP-024 (3, 10, 30 mg/kg, 2 hours) stimulates neuronal activity in brain regions related to cognition[2].

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

Animal Model:	Male Long-Evans rats (9 weeks old)[2]
Dosage:	10 mg/kg
Administration:	Oral, 1 hour before memory test
Result:	A 1-hour pretreatment with FTBMT (10 mg/kg, p.o.) significantly decreases the number of memory errors induced by MK-801[2].

Animal Model:	Male ICR mice (7 to 8 weeks old)[2]
Dosage:	3–30 mg/kg
Administration:	Oral, 60 minutes before s.c. administration of MK-801
Result:	FTBMT increases phospho-DARPP32 levels in the NAc slices[2].

REFERENCES

[1]. Tokumaru K, et al. Design, synthesis, and pharmacological evaluation of 4-azolyl-benzamide derivatives as novel GPR52 agonists. Bioorg Med Chem. 2017 Jun 15;25(12):3098-3115.

[2]. Nishiyama K, et al. FTBMT, a Novel and Selective GPR52 Agonist, Demonstrates Antipsychotic-Like and Procognitive Effects in Rodents, Revealing a Potential Therapeutic Agent for Schizophrenia. J Pharmacol Exp Ther. 2017 Nov;363(2):253-264.

Caution: Product has not been fully validated for medical applications. For research use only.

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