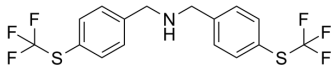
MY33-3

Cat. No.:	HY-123966
CAS No.:	2204280-41-9
Molecular Formula:	$C_{16}H_{13}F_6NS_2$
Molecular Weight:	397.4
Target:	Phosphatase
Pathway:	Metabolic Enzyme/Protease
Storage:	4°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 (25.16 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5164 mL	12.5818 mL	25.1636 mL
	5 mM	0.5033 mL	2.5164 mL	5.0327 mL
	10 mM	0.2516 mL	1.2582 mL	2.5164 mL

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

BIOLOGICAL ACTIVITY

Description

MY33-3 is a potent and selective inhibitor of receptor protein tyrosine phosphatase (RPTP)β/ζ, with an IC_{50} of ~0.1 μM. MY33-3 also inhibits PTP-1B (IC_{50} ~0.7 μM). MY33-3 can reduce ethanol consumption and alleviate Sevoflurane-induced neuroinflammation and cognitive dysfunction[1][2][3].

IC_{50} & Target

IC50: 0.1 μM (RPTPβ/ζ), 0.7 μM (PTP-1B)[1]

In Vitro

MY33-3 (1 μM; pretreated for 5 min) blocks Ethanol-induced activation of TrkA and ALK in SH-SY5Y cells[1].
MY33-3 (0.1-10 μM; 24 h) limits LPS-induced nitrites production and iNos increases in BV2 microglial cells[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	SH-SY5Y cells
Concentration:	1 μM
Incubation Time:	Pretreated for 5 min and co-treated for 15 min

Result:	Decreased the Ethanol-induced activation of TrkA and ALK. None of the treatments significantly changed total TrkA or total ALK protein levels.

In Vivo

MY33-3 (60 mg/kg; p.o. on days 3 and 4) reduces ethanol consumption when comparing day 2 with day 3. MY33-3 reduces preference for the ethanol solution on day 3[1].
MY33-3 (i.p.) reverses the Sevoflurane-induced decrease in the discrimination index and impaired motor learning ability[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male C57BL/6J mice (8-10 weeks of age) are received two-bottle drinking in the dark (DID) procedure using 20% ethanol[1]
Dosage:	60 mg/kg
Administration:	P.o. 1 hour before the drinking session in the DID test on days 3 and 4
Result:	Reduced ethanol consumption when comparing day 2 with day 3. Showed a reduced preference for the ethanol solution. Not affected total fluid consumption.

REFERENCES

[1]. Fernández-Calle R, et, al. Pharmacological inhibition of Receptor Protein Tyrosine Phosphatase β/ζ (PTPRZ1) modulates behavioral responses to ethanol. Neuropharmacology. 2018 Jul 15;137:86-95.

[2]. Fernández-Calle R, et, al. Role of RPTPβ/ζ in neuroinflammation and microglia-neuron communication. Sci Rep. 2020 Nov 20;10(1):20259.

[3]. Mao S, et, al. Pleiotrophin Potentiates Sevoflurane Anesthesia-induced Learning Deficits in Mice. J Mol Neurosci. 2022 Jan;72(1):48-55.

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