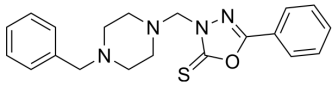
SD-6

Cat. No.:	HY-149212
CAS No.:	744206-31-3
Molecular Formula:	$C_{20}H_{22}N_4OS$
Molecular Weight:	366.48
Target:	Cholinesterase (ChE)
Pathway:	Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	SD-6 is an orally active inhibitor of hAChE and hBChE with IC_{50} values of 0.907 μM and 1.579 μM, respectively. SD-6 has excellent blood-brain barrier (BBB) permeability and no neurotoxicity, which can be used for research on Alzheimer's disease[1].

IC_{50} & Target	hAChE	hBCHE
	0.907 μM (IC_{50})	1.579 μM (IC_{50})

In Vitro

SD-6 (5-80 μM; 24 h) has neuroprotective effects in SH-SY5Y cells[1].

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:	5, 10, 20, 40 or 80 μM.
Incubation Time:	24 h.
Result:	Exhibited toxicity to differentiated SH-SY5Y cell lines and has a protective effect on undifferentiated SH-SY5Y cell lines.

In Vivo

SD-6 (100, 300 and 500 mg/kg; p.o.; single dose) has no toxic effect on nonpregnant female Wistar rats[1].

SD-6 (2.5, 5 and 10 mg/kg; p.o.; 3 times a day for 7 days) improves cognitive and memory deficits induced by Scopolamine (HY-N0296) in male Wistar rats[1].

SD-6 (2.5, 5 and 10 mg/kg; p.o.; single dose) significantly improves the abnormalities induced by Scopolamine in rats and promotes the normalization of biochemical indicators[1].

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

Animal Model:	10–11 weeks nonpregnant female Wistar rats (220–280 g)[1].
Dosage:	100, 300 and 500 mg/kg.
Administration:	Oral gavage; single dose.

Result:	Showed safety and tolerability.

Animal Model:	10–11 weeks male Wistar rats (220–280 g)[1].
Dosage:	2.5，5，10 mg/kg.
Administration:	Oral gavage; 3 times a day for 7 days or single dose.
Result:	Had the function of repairing cognitive and memory deficits. Reduced the level of AChE and malonaldehyde (MDA), increased the level of acetylcholine, superoxide dismutase (SOD), glutathione (GSH) and catalase.

REFERENCES

[1]. Waiker DK, et al. Development and Evaluation of Some Molecular Hybrids of N-(1-Benzylpiperidin-4-yl)-2-((5-phenyl-1,3,4-oxadiazol-2-yl)thio) as Multifunctional Agents to Combat Alzheimer's Disease. ACS Omega. 2023 Mar 2;8(10):9394-9414.

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