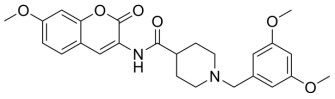
AChE-IN-59

Cat. No.:	HY-157978
CAS No.:	2957916-86-6
Molecular Formula:	$C_{25}H_{28}N_2O_6$
Molecular Weight:	452.5
Target:	Cholinesterase (ChE); Amyloid-β
Pathway:	Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

AChE-IN-59 (compounds 3b) is an AChE inhibitor, with an IC_{50} value of 0.05 μM. AChE-IN-59 can inhibit the aggregation of A β1-42, protect nerve cells and penetrate the blood-brain barrier well. AChE-IN-59 can be used for the research of Alzheimer's disease (AD)[1].

IC_{50} & Target

AChE	BChE	Aβ 1-42
0.05 μM (IC_{50})	4.68 μM (IC_{50})	

In Vitro

AChE-IN-59 (compounds 3b) (50/100/500/1000 μg/ mL, 5 min) can inhibit the activity of ChEs, with the IC_{50} values for AChE and BuChE of 0.05 μM and 4.68 μM, respectively, indicating that AChE-IN-59 is selective for AChE subtype[1].
AChE-IN-59 (50/100/500/1000 μg/ mL, 5 min) shows well antioxidant activity in vitro in tests of Ferric ion reducing antioxidant power (FRAP) and DPPH free radical scavenging capacity[1].
AChE-IN-59 (25 μM, 5 min) has no cytotoxic effect on 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
Concentration:	0/6.25/12.5/25/50/100 μM
Incubation Time:	5 h
Result:	Showed a good neuroprotective effect in the range of 6.25-25 μM and did not affect SH□ SY5Y cell viability below 25 μM.

In Vivo

AChE-IN-59 (compounds 3b) (25 μM, 3 days) can alleviate the behavioral effects of $AlCl_3$-induced zebrafish larval movement retardation[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	zebrafish juveniles with 5 mg/L $AlCl_3$ model[1]
Dosage:	5/10/25/50/100 μg/mL,
Administration:	Soak drug administration

Result:	Had certain therapeutic effect on $AlCl_3$-induced zebrafish behavior inhibition, which was concentration-dependent. With the increase of compound concentration, the total distance of zebrafish larvae increased gradually.

REFERENCES

[1]. Zhai J, et al. Design, synthesis, and evaluation of dual-target inhibitors for the treatment of Alzheimer's disease. Arch Pharm (Weinheim). 2024 Feb 8:e2300693.

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