AChE-IN-29

Cat. No.: HY-149817

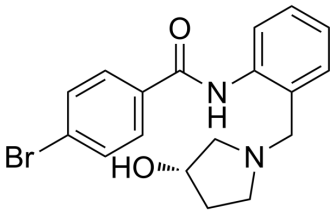
Molecular Formula: $C_{18}H_{19}BrN_2O_2$

Molecular Weight: 375.26

Target: Cholinesterase (ChE)

Pathway: Neuronal Signaling

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

AChE-IN-29, 3-OH pyrrolidine derivative, is an cholinesterase (ChE) inhibitor. AChE-IN-29 has cholinesterase inhibitory activity for hAChE, eeAChE and eqBChE with IC_{50} values of 0.25 μM, 0.23 μM and 0.72 μM, respectively. AChE-IN-29 can be used for the research of Alzheimer's disease[1].

IC_{50} & Target

IC50: 0.25 μM (hAChE); 0.23 μM (eeAChE); eqBChE (0.72 μM); 24.12 μM (in DPPH assay)[1]

In Vitro

AChE-IN-29 (VA10) can effectively inhibit the AChE, BChE and Aβ1-42[1].

AChE-IN-29 has Cholinesterase inhibitory activity for hAChE, eeAChE and eqBChE with IC_{50} values of 0.25 μM, 0.23 μM and 0.72 μM, respectively[1].

AChE-IN-29 has significant antioxidant activity with IC_{50} value of 24.12 μM in DPPH assay[1].

AChE-IN-29 (5 μM, 10 μM, 20 μM) can inhibit self-induced Aβ1-42 aggregation as well as hAChE-induced Aβ1-42 aggregation [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, and 20 μM
Incubation Time:	72 h
Result:	Reduced the Aβ1-42 aggregation and showed no toxic effects on tested cell line (SH-SY5Y).

In Vivo

AChE-IN-29 (VA10) (p.o.; 2.5, 5, and 10 mg/kg) ameliorates the memory and cognitive dysfunctions by inhibiting AChE activity [1].

AChE-IN-29 (p.o.; 10 mg/kg) recovers cell density in hippocampus region[1].

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

Animal Model:	Male Wistar rats (200 ± 15 g)[1]
Dosage:	2.5, 5, and 10 mg/kg
Administration:	p.o.; once a day for seven days

Result:	Improved cognition and memory in the scopolamine-induced cholinergic deficit. Restoresd the neuronal cells and can inhibit neuronal toxicity in AD conditions.

REFERENCES

[1]. Bhanukiran K,et al. Discovery of multi-target directed 3-OH pyrrolidine derivatives through a semisynthetic approach from alkaloid vasicine for the treatment of Alzheimer's disease. Eur J Med Chem. 2023;249:115145.

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