AChE/BuChE/MAO-B-IN-2

Cat. No.: HY-149090

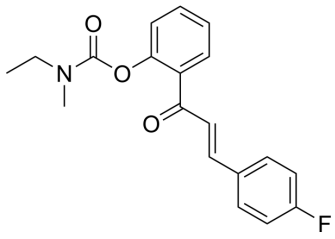
Molecular Formula: $C_{19}H_{18}FNO_3$

Molecular Weight: 327.35

Target: Cholinesterase (ChE); Monoamine Oxidase

Pathway: Neuronal Signaling

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



BIOLOGICAL ACTIVITY

Description

AChE/BuChE/MAO-B-IN-2 (compound 4b) is a potent AChE/BuChE inhibitor and showed good blood brain barrier (BBB) permeability in vitro with an IC_{50} value of 5.3 μM, 12.4 μM, 1.9±0.08 μM, for AChE, BuChE, ***hu***MAO-B, respectively.
AChE/BuChE/MAO-B-IN-2 (compound 4b) can inhibit excess AChE/BuChE in Alzheimer's disease (AD) brain.
AChE/BuChE/MAO-B-IN-2 (compound 4b) can be used in anti-Alzheimer's research[1].

IC_{50} & Target

AChE	BChE	hMAO-B
5.3 μM (IC_{50})	12.4 μM (IC_{50})	1.9 μM (IC_{50})

In Vitro

AChE/BuChE/MAO-B-IN-2 (5, 10, 20 μmol/L, 2 h) has significant neuroprotective effects against $A\beta_{1-42}$-induced PC12 cell injury[1].
AChE/BuChE/MAO-B-IN-2 (1 mg/mL for incubate, 0, 0.5, 1, 1.5, 2, 3 h) is stable in artificial gastrointestinal fluid, blood plasma, rat liver microsomes[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	PC12 cell
Concentration:	5, 10, 20 μmol/L
Incubation Time:	2 h
Result:	Increased the cell viability to 70.9 %, 75.0 % ($p < 0.05$) and 79.7 % ($p < 0.01$), respectively, in a dose-dependent manner.

In Vivo

AChE/BuChE/MAO-B-IN-2 (0.0049, 0.0195 and 0.078 μg/mL for treated, 10min) can significantly improve dyskinesia and reaction capacity of AlCl3-induced zebrafish AD model[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	AlCl3-induced zebrafish AD[1]
Dosage:	0.0049, 0.0195 and 0.078 μg/mL
Administration:	incubation

Result:	Presented the best distance velocity with 0.0195 μg/mL under the dark condition, with 0.0049 μg/mL under the light condition and with 0.0195 μg/mL under the alternating dark light.

REFERENCES

[1]. Chen R, et al. Development of the "hidden" multi-target-directed ligands by AChE/BuChE for the treatment of Alzheimer's disease. Eur J Med Chem. 2023 May 5;251:115253.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA