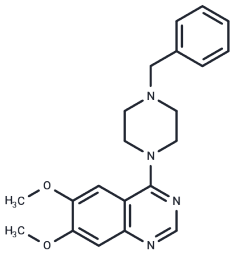
Data Sheet (Cat.No.T86541)

TargetMol

hAChE/hBACE-1-IN-4

Chemical Properties



CAS No. : 229476-71-5

Formula: C21H24N4O2

Molecular Weight: 364.44

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Compound AK-2, also known as hAChE/hBACE-1-IN-4, is a quinazoline derivative that demonstrates significant inhibitory activity against the enzymes hAChE and hBACE-1 (hAChE, IC 50 = 0.283 μM; hBACE-1, IC 50 = 0.231 μM). This compound also shows potential in inhibiting Aβ aggregation and possesses characteristics such as non-neurotoxicity, blood-brain barrier permeability, and oral activity, making it a valuable agent for research in Alzheimer's disease [1].
Targets(IC50)	Beta Amyloid,Cholinesterase (ChE)
In vitro	hAChE/hBACE-1-IN-4, tested at concentrations of 10, 20, 40, and 80 μM over 24 hours, exhibits non-neurotoxic properties [1]. In the Cell Viability Assay [1] using the SH-SY5Y cell line, this compound resulted in a 26% reduction in cell viability at the highest concentration of 80 μM.
In vivo	hAChE/hBACE-1-IN-4, administered at 500 mg/kg orally for 14 days, demonstrates a significant safety margin in Wistar rats, indicating its potential for further in vivo studies [1]. When given at 500 mg/kg orally for 9 days, this compound inhibits BACE-1 activity, alleviating cognitive deficits and exhibiting anti-aβ effects at the tested dosage in Wistar rats [1]. Additionally, hAChE/hBACE-1-IN-4, at 500 mg/kg by oral gavage for 4 days, shows the ability to cross the blood-brain barrier, reaching specific target sites in brain tissue [1]. Animal Model: Wistar rats [1] Dosage: 500 mg/kg for 14 days Administration: Oral gavage (p.o.) Result: Renal and hepatic functional parameters remained within normal limits, and tissue appearances were normal in kidneys, heart, liver, and brain. Animal Model: Wistar rats [1] Dosage: 20 mg/kg for 9 days Administration: Oral gavage (p.o.) Result: ELT decreased, and total platform crossings increased compared to the diseased model group, with enhancements in neuronal density and arrangement. Animal Model: Wistar rats [1] Dosage: 10 and 20 mg/kg for 4 days Administration: i.g. Result: AK-2 concentrations in brain homogenates were 0.633 and 0.977 μg/mL.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7439 mL	13.7197 mL	27.4394 mL
5 mM	0.5488 mL	2.7439 mL	5.4879 mL
10 mM	0.2744 mL	1.372 mL	2.7439 mL
50 mM	0.0549 mL	0.2744 mL	0.5488 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.