

TTBK1-IN-1

Chemical Properties

CAS No. : 2735015-60-6

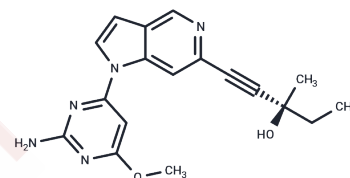
Formula: C₁₈H₁₉N₅O₂

Molecular Weight: 337.38

Keep away from moisture

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	TTBK1-IN-1 (compound 31) is a potent and selective tau microtubule protein kinase 1 (TTBK1) inhibitor (IC ₅₀ =315 nM) with central nervous system (CNS) penetration that inhibits tau phosphorylation at the disease-associated Ser 422 epitope, and can be used to study Alzheimer's disease.
Targets(IC ₅₀)	Microtubule Associated
In vitro	In primary mouse neurons at DIV14, short-term treatment (1 hour) with TTBK1-IN-1 at concentrations from 0.0625 to 100μM had no effect on neurite length. However, longer exposures (6-24 hours) at the same concentration range led to a significant reduction in neurite length starting around 12-18 hours after treatment[1].
In vivo	In mice, intraperitoneal injection of TTBK1-IN-1 (2.5-180mg/kg, given 5min before isoflurane exposure) significantly reduced tau phosphorylation at Ser422 in the brain at 180mg/kg. A dose-dependent trend was also observed: 20mg/kg reduced p-Ser422 levels by 21%, while 60mg/kg led to a 60% reduction, in a model of isoflurane-induced hypothermia[1].

Solubility Information

Solubility	Ethanol: 20 mg/mL (59.28 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.964 mL	14.8201 mL	29.6402 mL
5 mM	0.5928 mL	2.964 mL	5.928 mL
10 mM	0.2964 mL	1.482 mL	2.964 mL
50 mM	0.0593 mL	0.2964 mL	0.5928 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.

Reference

Tamara Halkina, et al. Discovery of Potent and Brain-Penetrant Tau Tubulin Kinase 1 (TTBK1) Inhibitors that Lower Tau Phosphorylation In Vivo. *J Med Chem.* 2021 May 13;64(9):6358-6380.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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