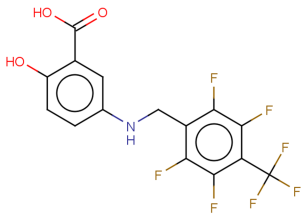
Data Sheet (Cat.No.T41058)

TargetMol

Nelonemdaz potassium

Chemical Properties



CAS No. : 916214-57-8

Formula: C15H7F7KNO3

Molecular Weight: 421.31

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	Nelonemdaz potassium (also known as Salfaprodil) is a potent NR2B-selective and uncompetitive antagonist of N-methyl-D-aspartate (NMDA). This compound exhibits remarkable neuroprotection against cell death induced by both NMDA and free radicals, in addition to its role as a free radical scavenger.
Targets(IC50)	Others,iGluR
In vitro	Nelonemdaz potassium demonstrates neuroprotective effects by effectively counteracting 300 μM N-methyl-d-aspartate (NMDA) toxicity with doses starting as low as 30 μM and inhibiting cultured cortical neurons' electrophysiologic responses to 300 μM NMDA in a concentration-dependent manner. Even at concentrations ranging from 0.1 to 1 μM, it significantly mitigates Fe2+-induced neurotoxicity and prevents the degeneration of neurons and glia in cortical cell cultures. Moreover, Nelonemdaz potassium exhibits potent antioxidant properties by scavenging superoxide, nitric oxide, and hydroxyl radicals with respective IC50 values of 63.07±1.44 μM, 155.8±4.88 μM, and 58.45±1.74 μM. It also decreases antimycin A-induced ROS/RNS production and malondialdehyde (MDA) formation in a dose-dependent manner, with IC50 values of 2.21±0.11 μM and 2.72±0.26 μM, respectively, and effectively reduces iron-ascorbate-induced lipid peroxidation (IC50 = 24.56±0.07 μM).
In vivo	Nelonemdaz potassium, administered intravenously at dosages ranging from 0.5-20 mg/kg, significantly reduces the size of cerebral infarcts 24 hours post a 60-minute middle cerebral artery occlusion (MCAO) in a dose-dependent manner. At a specific dosage of 5 mg/kg, it notably protects both white matter, including axons and myelin, and gray matter from ischemic brain damage. Studies conducted on male Sprague-Dawley rats weighing 260 to 300 g using two different occlusion models—clip and intraluminal thread occlusion—revealed that a dosage of 0.5-20 mg/kg administered 5 minutes after reperfusion could lead to a significant neuroprotective effect, peaking with a 66% reduction in infarct volume at dosages between 2.5 and 5 mg/kg. Specifically, at a 5 mg/kg dosage, it prevented neuronal damage in critically vulnerable cortical areas. Further, under the intraluminal thread occlusion model, the same 5 mg/kg dosage given 30 minutes post-reperfusion did not alter physiological parameters (arterial pH, PCO2, PO2, hematocrit) but effectively reduced infarct volumes in the cortex and striatum and markedly diminished white matter damage in the striatum and external capsule.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3735 mL	11.8677 mL	23.7355 mL
5 mM	0.4747 mL	2.3735 mL	4.7471 mL
10 mM	0.2374 mL	1.1868 mL	2.3735 mL
50 mM	0.0475 mL	0.2374 mL	0.4747 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

Gwag BJ, et al. Marked prevention of ischemic brain injury by Neu2000, an NMDA antagonist and antioxidant derived from aspirin and sulfasalazine. J Cereb Blood Flow Metab. 2007 Jun;27(6):1142-51.
Sung IC, et, al. Neu2000, an NR2B-selective, Moderate NMDA Receptor Antagonist and Potent Spin Trapping Molecule for Stroke. Drug News Perspect. 2010 Nov; 23(9): 549-56.
Nishant PV, et, al. Antioxidant Properties of Neu2000 on Mitochondrial Free Radicals and Oxidative Damage. Toxicol In Vitro. 2013 Mar; 27(2): 788-97.