# Nelonemdaz potassium

**Cat. No.:** HY-106408A

**CAS No.:** 916214-57-8

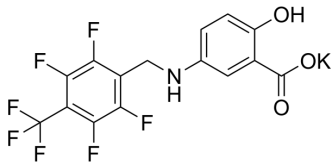
**Molecular Formula:** $C_{15}H_7F_7KNO_3$

**Molecular Weight:** 421.31

**Target:** iGluR

**Pathway:** Membrane Transporter/Ion Channel; Neuronal Signaling

**Storage:** 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 200 mg/mL (474.71 mM; Need ultrasonic)

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 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 |

Please refer to the solubility information to select the appropriate solvent.

## BIOLOGICAL ACTIVITY

**Description**

Nelonemdaz (Salfaprodil) potassium is an NR2B-selective and uncompetitive antagonist of N-methyl-D-aspartate (NMDA). Nelonemdaz potassium is also a free radical scavenger. Nelonemdaz potassium has excellent neuroprotection against NMDA- and free radical-induced cell death[1][2].

**$IC_{50}$ & Target**

NMDA[1]

**In Vitro**

Nelonemdaz potassium (10-300 μM) shows apparent neuroprotection against 300 μM N-methyl-d-aspartate (NMDA) at doses as low as 30 μM[1].

Nelonemdaz potassium (10-500 μM) inhibits the electrophysiologic response of cultured cortical neurons to 300 μM NMDA in a concentration-dependent manner[1].

Nelonemdaz potassium (0.1-1 μM) produces a marked reduction of $Fe^{2+}$-induced neurotoxicity, even at doses of 0.1 to 0.3 μM[1].

Nelonemdaz potassium (0.1-1 μM) blocks the degeneration of neurons and glia in cortical cell cultures[1].

Nelonemdaz potassium (0-350 μM) effectively scavenges superoxide radicals ($IC_{50}$=63.07±1.44 μM), nitric oxide ($IC_{50}$ =155.8±4.88 μM), and hydroxyl radicals ($IC_{50}$=58.45±1.74 μM)[3].

Nelonemdaz potassium (0.78-12.5 μM) decreases the amount of antimycin A-induced ROS/RNS formation in a dose-dependent manner, with an $IC_{50}$ of 2.21±0.11 μM[3].

Nelonemdaz potassium (0.19-12.5 μM) inhibits malondialdehyde (MDA) formation with an $IC_{50}$ of 2.72±0.26 μM[3].
Nelonemdaz potassium (0-125 μM) effectively reduces iron-ascorbate-induced lipid peroxidation ($IC_{50}$=24.56±0.07 μM)[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

Nelonemdaz potassium (0.5-20 mg/kg; i.v.) reduces cerebral infarct evolving 24 h after 60-mins occlusion of the middle cerebral artery occlusion (MCAO) substantially and dose dependently[1].
Nelonemdaz potassium (5 mg/kg; i.v.) protects white matter such as axons and myelin as well as gray matter from ischemic brain injury[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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|---|---|
| Animal Model: | Male Sprague-Dawley rats (260 to 300 g) (clip occlusion model)[1] |
| Dosage: | 0.5-20 mg/kg |
| Administration: | I.v. administration 5 mins after reperfusion |
| Result: | Produced a large neuroprotective effect, with a maximal reduction in infarct volume of 66% at doses of 2.5 to 5 mg/kg.<br>Not observed neuronal damage in the most vulnerable cortical area after administration of 5 mg/kg. |

| | |
|---|---|
| Animal Model: | Male Sprague-Dawley rats (260 to 300 g) (intraluminal thread occlusion model)[1] |
| Dosage: | 5 mg/kg |
| Administration: | I.v. administration 30 mins after reperfusion |
| Result: | Did not change physiologic variables such as arterial pH, $PCO_2$, $PO_2$, and hematocrit.<br>Reduced infarct volume evolving in the cortex and the striatum substantially.<br>Reduced white matter damage in the striatum and external capsule markedly. |

## REFERENCES


[1]. Nishant PV, et, al. Antioxidant Properties of Neu2000 on Mitochondrial Free Radicals and Oxidative Damage. Toxicol In Vitro. 2013 Mar; 27(2): 788-97.

[2]. 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.

[3]. 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.



**Caution: Product has not been fully validated for medical applications. For research use only.**



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