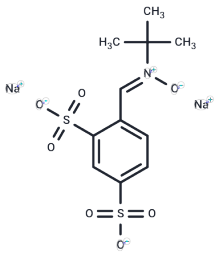
Data Sheet (Cat.No.T6201)

TargetMol

Disufenton sodium

Chemical Properties



CAS No. : 168021-79-2

Formula: C11H13NNa2O7S2

Molecular Weight: 381.33

Storage: Store at low temperature
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	Disufenton sodium (NXY-059), a new-type nitrone, exhibits potently neuroprotective effects.
Targets(IC50)	Reactive Oxygen Species,ROS
In vitro	NXY-059 is more soluble than the spin trapping agent α-phenyl-N-tert-butyl nitrone (PBN). [1] In an in vitro blood-brain barrier (BBB) model, 250 mM of NXY-059 administered at the onset or up to 4 h after oxygen glucose deprivation (OGD) produces a significant reduction in the increased BBB permeability caused by OGD. Furthermore, OGD produces a huge influx of tissue plasminogen activator across the BBB, which is substantially reduced by NXY-059. [2]
In vivo	NXY-059 reduces infarct volume in rats subjected to 2 hours of middle cerebral artery occlusion in a dose-dependent manner. At equimolar doses (3.0 mg/kg for NXY-059 and 1.4 mg/kg for PBN), NXY-059 is more efficacious than PBN. Similar results are obtained when a recovery period of 7 days is allowed. The window of therapeutic opportunity for NXY-059 is 3 to 6 hours after the start of recirculation. [1] NXY-059, a free radical-trapping agent, has a substantial protective effect, lessening the disability caused by an experimentally induced stroke in a primate species. NXY-059 treatment reduces the overall amount of brain damage by >50% of saline-treatment values, with similar levels of protection afforded to both white and gray matter. [3] Treatment with NXY-059 (50 mg/kg subcutaneous plus 8.8 mg/kg/h for 3 days subcutaneous delivered via implanted osmotic pumps) significantly decreases neurological impairment following intracerebral hemorrhage in rat, and reduces the neutrophil infiltrate observed 48 hours post-hemorrhage in the vicinity of the hematoma, and the number of TUNEL-positive cells 48 hours post-hemorrhage at the hematoma margin. [4]

Solubility Information

Solubility	H2O: 70 mg/mL (183.57 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 45 mg/mL (118.01 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (5.24 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6224 mL	13.112 mL	26.224 mL
5 mM	0.5245 mL	2.6224 mL	5.2448 mL
10 mM	0.2622 mL	1.3112 mL	2.6224 mL
50 mM	0.0524 mL	0.2622 mL	0.5245 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

Kuroda S, et al, J Cereb Blood Flow Metab, 1999, 19(7), 778-787.
Martínez-Alonso E, Escobar-Peso A, Aliena-Valero A, et al. Preclinical Characterization of Antioxidant Quinolyl Nitrone QN23 as a New Candidate for the Treatment of Ischemic Stroke. Antioxidants. 2022, 11(6): 1186
Culot M, et al, Brain Res, 2009, 19(1294), 144-152.
Marshall JW, et al, Stroke, 2001, 32(1), 190-198.
Peeling J, et al, Neuropharmacology, 2001, 40(3), 433-439.