Data Sheet (Cat.No.T0407)

TargetMol

Edaravone

Chemical Properties

CAS No. :	89-25-8
Formula:	C10H10N2O
Molecular Weight:	174.20
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	Edaravone (MCI-186) is a potent new free radical scavenger used for the therapy of patients with acute brain infarction.
Targets(IC50)	Apoptosis,MMP,Free radical scavengers
In vitro	Edaravone significantly improves neurological function in animals. Treatment with edaravone substantially reduces TUNEL-positive apoptotic cells and increases the expression of Bcl-2, while decreasing the immunoreactivity of Bax protein in the peri-infarct area. The research demonstrates that edaravone provides excellent protection against ischemic/reperfusion-induced brain injury through a Bcl-2/Bax protein-dependent anti-apoptotic mechanism. Following a 24-hour infusion of edaravone into murine brain tissue, there is a notable reduction in infarct volume and amelioration of neurological deficits. In the early stages post-reperfusion, edaravone significantly inhibits the accumulation of HNE-modified proteins and 8-OHdG in the penumbral region, reduces the expression of iNOS, diminishes microglial activation, and lowers the formation of nitrotyrosine. Edaravone also markedly attenuates renal function and pathological outcomes in rat kidneys, significantly reducing free radical production in renal tubular epithelial cells as indicated by fluorescence.
In vivo	Edaravone optimizes the state of NOS by reducing the detrimental isoforms iNOS and nNOS, while increasing the beneficial eNOS, thus favoring neuroprotection in ischemic stroke. It inhibits oxidation and enhances eNOS expression without boosting production, improving and preserving cerebral blood flow during reperfusion without necessitating peroxynitrite formation. Edaravone exerts its neuroprotective effect by mitigating neuronal damage from cerebral ischemia and inhibiting endothelial injury.
Cell Research	Cell viability is quantified by MTT assay and trypan blue staining. MTT (5?mg/mL, 20?μL) is added to each well and incubated for 4?h at 37°C after the drug treatments. The medium is removed and the cell pellet is dissolved in DMSO. Then, the optical density (OD) values are measured at 570?nm using an ELISA reader.

Solubility Information

Solubility	DMSO: 247 mg/mL (1417.91 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	5% DMSO+40% PEG300+5% Tween80+50% Saline: 4 mg/mL (22.96 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	5.7405 mL	28.7026 mL	57.4053 mL
5 mM	1.1481 mL	5.7405 mL	11.4811 mL
10 mM	0.5741 mL	2.8703 mL	5.7405 mL
50 mM	0.1148 mL	0.5741 mL	1.1481 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

Yoshida H, et al. CNS Drug Rev, 2006, 12(1), 9-20.
Wang F, Li R, Tu P, et al. Total glycosides of Cistanche deserticola promote neurological function recovery by inducing neurovascular regeneration via Nrf-2/Keap-1 pathway in MCAO/R rats. Frontiers in Pharmacology. 2020, 11.
Guo X J, Huang L Y, Gong S T, et al.Peroxynitrite-Triggered Carbon Monoxide Donor Improves Ischemic Stroke Outcome by Inhibiting Neuronal Apoptosis and Ferroptosis.Molecular Neurobiology.2024: 1-16.
Zhang N, et al. Stroke, 2005, 36(10), 2220-2225.
Doi K, et al. Kidney Int, 2004, 65(5), 1714-1723.
Amemiya S, et al. Eur J Pharmacol, 2005, 516(2), 125-130.
Bai X, et al. Protective Effect of Edaravone on Glutamate-Induced Neurotoxicity in Spiral Ganglion Neurons. Neural Plast. 2016;2016:4034218. Epub 2016 Nov 10.
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