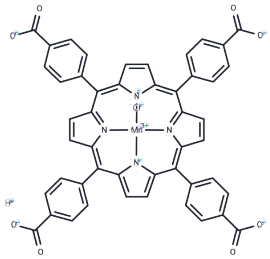
Data Sheet (Cat.No.T38164)

TargetMol

MnTBAP chloride

Chemical Properties



CAS No. : 55266-18-7

Formula: C48H25ClMnN4O8

Molecular Weight: 876.13

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	MnTBAP chloride (Mn(III)TBAP) is a cell-permeable superoxide dismutase (SOD) mimetic and peroxynitrite scavenger that reduces the doubling time of SOD-E. coli by a factor of 2. MnTBAP chloride exhibits anti-inflammatory effects through upregulation of BMPR-II and inhibition of NFκB signaling. mnTBAP chloride is a manganese porphyrin complex with antioxidant properties and has potential for use in the study of fibrotic responses in chronic kidney diseases (CKDs).
Targets(IC50)	Antioxidant,NF-κB
In vitro	Due to its superoxide dismutase mimetic property, 50 microM MnTBAP was found to attenuate the injury produced dose-dependently by exposure to various concentrations of paraquat for 4 h. MnTBAP also protected endothelial cells in a dose-dependent manner against paraquat. The protective effect of MnTBAP appears to be caused by its intracellular superoxide-scavenging activity because neither the zinc form nor CuZnSOD protected the cells against paraquat-induced injury.[1]
In vivo	Local administration of MnTBAP significantly and reduced carrageenan-induced paw oedema dose-dependently at all time points, which was related to its superoxide dismutase mimetic property. MnTBAP also caused a significant dose-dependent reduction in paw myeloperoxidase activity, as well as preventing histological injury. Immunohistochemical analyses for nitrotyrosine showed a positive staining in paw from carrageenan-treated rats.[2]

Solubility Information

Solubility	DMSO: 90 mg/mL (102.72 mM),Sonication is recommended. 0.5 M NaOH: 18 mg/mL (20.54 mM),Sonication is recommended. 1M NaOH: 9 mg/mL (10.27 mM),when pH is adjusted to 8 with NaOH. 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: 4 mg/mL (4.57 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	1.1414 mL	5.7069 mL	11.4138 mL
5 mM	0.2283 mL	1.1414 mL	2.2828 mL
10 mM	0.1141 mL	0.5707 mL	1.1414 mL
50 mM	0.0228 mL	0.1141 mL	0.2283 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

Day BJ, et al. A metalloporphyrin superoxide dismutase mimetic protects against paraquat-induced endothelial cell injury, in vitro. J Pharmacol Exp Ther. 1995;275(3):1227-1232.
Cuzzocrea S, et al. Protective effects of Mn(III)tetrakis (4-benzoic acid) porphyrin (MnTBAP), a superoxide dismutase mimetic, in paw oedema induced by carrageenan in the rat. Biochem Pharmacol. 1999;58(1):171-176.
Yu J, et al. MnTBAP Therapy Attenuates Renal Fibrosis in Mice with 5/6 Nephrectomy. Oxid Med Cell Longev. 2016; 2016:7496930.
Zhou Q, et al. MnTBAP increases BMPR-II expression in endothelial cells and attenuates vascular inflammation. Vascul Pharmacol. 2016;84:67-73.
Faulkner KM, et al. Stable Mn(III) porphyrins mimic superoxide dismutase in vitro and substitute for it in vivo. J Biol Chem. 1994;269(38):23471-23476.