Imisopasem manganese

Cat. No.: HY-13336

CAS No.: 218791-21-0

Molecular Formula: $C_{21}H_{31}Cl_2MnN_5$

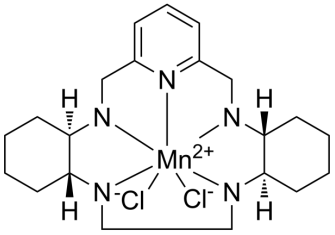
Molecular Weight: 479

Target: SOD

Pathway: Immunology/Inflammation

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 25 mg/mL (52.19 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0877 mL	10.4384 mL	20.8768 mL
	5 mM	0.4175 mL	2.0877 mL	4.1754 mL
	10 mM	0.2088 mL	1.0438 mL	2.0877 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 8.33 mg/mL (17.39 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

Imisopasem manganese (M40403) is a stable non-peptidyl mimetic of manganese superoxide MnSOD.

In Vitro

Imisopasem manganese is a small molecule, synthetic manganese containing superoxide dismutase mimetic (SODm) that removes superoxide anions without interfering with other reactive species known to be involved in inflammatory responses (e.g. nitric oxide, NO and peroxynitrite, ONOO-)[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Imisopasem manganese is a small-molecule superoxide dismutase mimetic that has shown efficacy in animal model disease states in which superoxide anions are thought to play a key role. Imisopasem manganese inhibits the inflammatory response following the intrapleural injection of carrageenan in rats. All parameters of inflammation are attenuated by Imisopasem manganese except for NOx, PGE2 and IL-10 which remains unaltered[1]. Decreased apoptosis of the large and particularly the small bowel and marked recovery of both lymphoid and hematopoietic tissues occurs in the Imisopasem

manganese pre-treated mice. Imisopasem manganese is effective in reducing TBI-induced tissue destruction and has potential as a new radioprotective agent[2].

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PROTOCOL

Animal Administration [1][2]

Rats: Male Sprague-Dawley rats are used in the study. M40403 (5-20 mg kg^{-1}), or an equivalent volume (0.3 mL) of vehicle (26 mm sodium bicarbonate buffer, pH 8.1-8.3), is injected intraperitoneally (i.p.) 15 min before carrageenan. At 4 h after the injection of carrageenan, the animals are killed by inhalation of CO_2[1].

Mice: 30 mg dry powder M40403 is dissolved in 6.0 ml SBC adjusted to pH 8.3 with 1 M NaOH. This stock solution is diluted to 1.25 mg/mL in SBC. Two experimental models are tested. In one, the dose of IR is held constant at 8.5 Gy total body irradiation (TBI). The mice are injected i.p. with a single dose of 40 mg/kg, 30 mg/kg, 20 mg/kg or 10 mg/kg M40403. Thirty minutes later the mice receives 8.5 Gy total body irradiation (TBI). Control animals receives 0.1 ml of SBC buffer prior to TBI. In the other model, groups of 20 mice receives either 6.5 or 7.5 Gy TBI. One half of each group is treated with 2.0 mg/kg M40403 i.p. and the other with SBC 30 min before TBI. All are followed for survival[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Salvemini D, et al. Pharmacological manipulation of the inflammatory cascade by the superoxide dismutase mimetic,M40403. Br J Pharmacol. 2001 Feb;132(4):815-27.

[2]. Masini E, et al. Protective effects of M40403, a selective superoxide dismutase mimetic, in myocardial ischaemia and reperfusion injury in vivo. Br J Pharmacol. 2002 Jul;136(6):905-17.

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