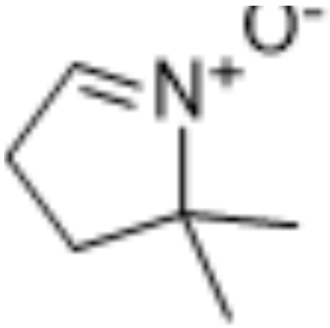
DMPO

Cat. No.:	HY-107690
CAS No.:	3317-61-1
Molecular Formula:	$C_6H_{11}NO$
Molecular Weight:	113.16
Target:	Reactive Oxygen Species; NO Synthase
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	-20°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 100 mg/mL (883.70 mM)
DMSO : 100 mg/mL (883.70 mM; Need ultrasonic)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	8.8370 mL	44.1852 mL	88.3704 mL
5 mM	1.7674 mL	8.8370 mL	17.6741 mL
10 mM	0.8837 mL	4.4185 mL	8.8370 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (22.09 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (22.09 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (22.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

DMPO is a cell permeable hydrophillic spin trap agent for superoxide detection[1].

In Vitro

DMPO (100 μM, 24 h) attenuates SIN-1 (3-Morpholinosydnonimine (HY-126849)) (500 μM, 2 h)-mediated cytotoxicity and ROS generation in BAEC or HEK293 cells[3].
DMPO (100 μM, 24 h) increases NO levels via increasing eNOS activity and phospho-eNOS levels in BAEC cells[3].
DMPO (1-100 mM) inhibits FMLP and concanavalin A (HY-P2149) induced $\cdot O_2^-$ secretion in neutrophils[4].
DMPO (50 mM, 24 h) inhibits Lipopolysaccharides (HY-D1056)-triggered M1-linked pro-inflammatory cytokine (IL-1β, IL-6 and

TNF-α) and NO production in RAW 264,6 cells[5].

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

Western Blot Analysis[3]

Cell Line:	BAEC cells
Concentration:	100 μM
Incubation Time:	12 and 24 h
Result:	Increased p-eNOS and p-Akt level.

In Vivo

DMPO (10-100 mg/kg, i.p.) shows antinociceptive effect in rats subjected to Formalin induced hyperalgesia[6].

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

REFERENCES

[1]. Das A, et al. Reversal of SIN-1-induced eNOS dysfunction by the spin trap, DMPO, in bovine aortic endothelial cells via eNOS phosphorylation. Br J Pharmacol. 2014 May;171(9):2321-34.

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[3]. Zhai Z, et al. The spin trap 5,5-dimethyl-1-pyrroline N-oxide inhibits lipopolysaccharide-induced inflammatory response in RAW 264.7 cells. Life Sci. 2012 Mar 10;90(11-12):432-9.

[4]. Woo suk Chung, et al. Antinociceptive Effect of Intraperitoneally Administered 5,5-dimethyl-1-pyrroline N-oxide on Formalin Induced Nociception in Rats. Korean Journal of Anesthesiology 2008;54(3):S35-S39.

[5]. Ranguelova K, Mason RP. The fidelity of spin trapping with DMPO in biological systems. Magn Reson Chem. 2011;49(4):152-158.

[6]. Konaka R, Kawai M, Noda H, Kohno M, Niwa R. Synthesis and evaluation of DMPO-type spin traps. Free Radic Res. 1995;23(1):15-25.

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