Data Sheet (Cat.No.T5027)

TargetMol

Dimemorfan phosphate

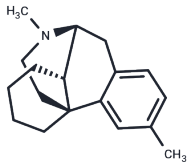
Chemical Properties

CAS No. : 36304-84-4

Formula: C18H25N.H3O4P

Molecular Weight: 353.4

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	Dimemorfan phosphate (3,17-dimethylmorphinan) is a sigma 1 receptor agonist. Dimemorfan phosphate is used as a potent antitussive.
Targets(IC50)	Sigma receptor
In vitro	Dimemorfan, at concentrations of 5-20 μM, concentration-dependently inhibits ROS production induced by fMLP and PMA, demonstrating greater potency against fMLP-induced ROS with an IC50 of 7.0 μM. At higher concentrations (10-50 μM), it does not significantly scavenge free radicals in the xanthine/xanthine oxidase system. Moreover, Dimemorfan effectively reduces Mac-1 upregulation and notably suppresses ROS and NO production induced by LPS in the 10-20 μM range. It also diminishes LPS-induced iNOS protein expression and decreases both the percentage and the median channel fluorescence (MCF) intensities of MCP-1 and TNF-α in the BV2 cytosol. At a concentration of 20 μM, Dimemorfan significantly inhibits the degradation of cytosolic Iκ-Bα, hinders the nuclear translocation of NF-κB p65, and curtails the transcriptional activity of NF-κB, showcasing its multifaceted inhibitory effects on inflammation-related mechanisms.
In vivo	Dimemorfan, administered subcutaneously at doses of 6.25 or 12.5 mg/kg, significantly reduces BAY k-8644-induced convulsive behaviors in mice in a dose-dependent manner, as evidenced by a comparison of groups receiving dimemorfan and BAY k-8644 (6.25 mg/kg or 12.5 mg/kg) versus a control group treated with saline and BAY k-8644 ($P<0.05$ and $P<0.01$, respectively). Additionally, dimemorfan markedly decreases the BAY k-8644-stimulated elevation of c-fos and c-jun protein expression, also in a dose-related fashion. Notably, dimemorfan does not significantly impact mice's locomotor activity nor induce notable circling behavior. Moreover, intraperitoneal injections of dimemorfan (1 and 5 mg/kg) suppress the rise in plasma TNF-α levels in mice. Furthermore, dimemorfan treatment effectively hampers the infiltration of neutrophils into the lung and liver as well as decreases oxidative stress, evidenced by EB staining, in these organs following LPS challenge.

Solubility Information

Solubility	H2O: 10 mM,Sonication is recommended. DMSO: Insoluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8297 mL	14.1483 mL	28.2965 mL
5 mM	0.5659 mL	2.8297 mL	5.6593 mL
10 mM	0.283 mL	1.4148 mL	2.8297 mL
50 mM	0.0566 mL	0.283 mL	0.5659 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

Wang YH, et al. Anti-inflammatory effects of dimemorfan on inflammatory cells and LPS-induced endotoxin shock in mice. Br J Pharmacol. 2008 Jul;154(6):1327-38.
Shin EJ, et al. Dimemorfan prevents seizures induced by the L-type calcium channel activator BAY k-8644 in mice. Behav Brain Res. 2004 May 5;151(1-2):267-76.