Product Data Sheet

Product Name: PPM-18
Cat. No.: GC16657

Chemical Properties

Cas. No.	65240-86-0		
Chemical Name	N-(1,4-dihydro-1,4-dioxo-2-naphthalenyl)-benzamide		
SMILES	O=C(NC1=CC(=O)c2ccccc2C1=O)c1ccccc1		
Formula	$C_{17}H_{11}NO_3$	M.Wt	277.3
Solubility	≥ 27.7mg/mL in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	PPM-18		

Background

PPM-18 is a chemically synthesized naphthoquinone derivative and an anti-inflammatory agent that inhibits the expression of inducible NO synthase (iNOS). NOS catalyzes the oxidation of the amino acid L-arginine to form NO. As an important cellular signaling molecule, NO has been implicated in modulating vascular tone, airway tone, insulinsecretion, and peristalsis. It has also been shown that NO is involved in angiogenesis and neural development and can function as a retrograde neurotransmitter

In vitro: Pretreatment of rat alveolar macrophages with PPM-18 (0.1-10 μM) significantly inhibited nitrite production, iNOS mRNA accumulation and iNOS protein expression. PPM-18 did not affect the enzymic activities of iNOS and other constitutive NOS forms directly. PPM-18 (10 μM) inhibited the LPS-induced increase in nuclear transcription factor κB (NF-κB) p65 and p50 in nucleus.. PPM-18 significantly decreased LPS-induced the production of tumour necrosis factor α [1]. PPM-18 inhibited NF-κB activation with an IC50 of 5 μM [3].

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In vivo: In rats, intravenously pretreatment with PPM-18 (15 mg/kg) maintained a significantly higher mean arterial pressure compared with LPS-treated controls. PPM-18 protected mice against LPS-induced lethal toxicity. In mice, PPM-18 (5 or 15 mg/kg) dose-dependently decreased the lethality. In the mouse model of sepsis, PPM-18 exhibited as a potent inhibitor of iNOS expression by blocking the binding of NF-κB to promoter and exerted a beneficial effect [1].

References:

[1] YU M S, LIN J F W U T L, KUO C S. Inhibition of nitric oxide synthase expression by PPM-18, a novel anti-inflammatory agent, in vitro and in vivo[J]. Biochemical Journal, 1997, 328(2): 363-369.
[2] Beck K F, Eberhardt W, Frank S, et al. Inducible NO synthase: role in cellular signalling[J]. Journal of Experimental Biology, 1999, 202(6): 645-653.
[3] Davis, M. E.,Grumbach, I.M.,Fukai, T., et al. Shear stress regulates endothelial nitric-oxide synthase promoter activity through nuclear factor κB binding.The Journal of Biological Chemisty 279(1), 163-168 (2004).

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