Adelmidrol

Cat. No.: HY-B1026

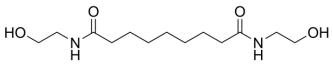
CAS No.: 1675-66-7

Molecular Formula: $C_{13}H_{26}N_2O_4$

Molecular Weight: 274.36

Target: NF-κB; COX; PPAR

Pathway: NF-κB; Immunology/Inflammation; Cell Cycle/DNA Damage; Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor



Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year

SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (364.48 mM)

H_2O : ≥ 100 mg/mL (364.48 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6448 mL	18.2242 mL	36.4485 mL
	5 mM	0.7290 mL	3.6448 mL	7.2897 mL
	10 mM	0.3645 mL	1.8224 mL	3.6448 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: ≥ 2.08 mg/mL (7.58 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.58 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (7.58 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Adelmidrol exerts important anti-inflammatory effects that are partly dependent on PPARγ. Adelmidrol reduces NF-κB translocation, and COX-2 expression.

IC_{50} & Target	NF-κB	COX-2	PPARγ

In Vitro	Adelmidrol is a palmitoylethanolamide analogue. Adelmidrol reduces NF-κB translocation, COX-2, and p-ERK expression; proinflammatory cytokine release; and the incidence of nitrotyrosine and poly(ADP)ribose in the colon[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Adelmidrol (10 mg/kg, o.s.) reduces significantly the degree and severity of the macroscopic and histologic signs of colon injury. Moreover, 4 days after colitis induced by dinitrobenzene sulfonic acid (DNBS) treatment, all mice have diarrhea and a reduction in body weight (compared with the sham groups). Adelmidrol (10 mg/kg, o.s.) treatment significantly reduces the loss of body weight. The inflammatory bowel disease (IBD) induced by DNBS intrarectally administered is also characterized by an augmentation in myeloperoxidase (MPO) activity, an indicator of neutrophil accumulating in the colon. This is consistent with light microscopic observations showing the colon of vehicle-treated DNBS mice to contain a large number of neutrophils. In contrast, Adelmidrol (10 mg/kg, o.s.) significantly reduces the degree of polymorphonuclear cell infiltration (determined as reduction in MPO activity) in inflamed colon[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [1]	Mice[1] Male adult CD1 mice (25-30 g) and male mice (20-27 g) are placed in a controlled environment and maintained on a 12-hour light/dark cycle with food and water available ad libitum. Mice are casually divided into the following groups (10 in each group) (1)Sham+vehicle group: Vehicle solution (saline) is given by oral administration for 4 days. (2) Sham+Adelmidrol (10 mg/kg): Administered o.s. for 4 days. (3) DNBS+vehicle: Mice are injected by DNBS as described, and vehicle (saline) is given o.s. each day for 4 days, starting 60 minutes after the injection of DNBS. (4) DNBS+Adelmidrol (10 mg/kg): Mice are injected by DNBS as described, and Adelmidrol (10 mg/kg) is given o.s. each day, starting 60 minutes after administration of DNBS[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Biomed Pharmacother. 2023 Jun 27;165:115051.
- Eur J Pharmacol. 2023 Dec 16:176224.

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REFERENCES

[1]. Cordaro M, et al. Adelmidrol, a Palmitoylethanolamide Analogue, as a New Pharmacological Treatment for the Management of Inflammatory Bowel Disease. Mol Pharmacol. 2016 Nov;90(5):549-561.

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