Hydrocortisone hemisuccinate

Cat. No.: HY-B1402

CAS No.: 2203-97-6

Molecular Formula: $C_{25}H_{34}O_8$

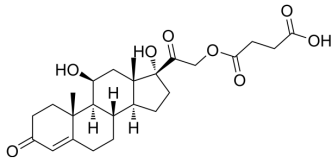
Molecular Weight: 462.53

Target: Interleukin Related; Glucocorticoid Receptor

Pathway: Immunology/Inflammation; Vitamin D Related/Nuclear Receptor

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (540.51 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1620 mL	10.8101 mL	21.6202 mL
	5 mM	0.4324 mL	2.1620 mL	4.3240 mL
	10 mM	0.2162 mL	1.0810 mL	2.1620 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 (4.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.50 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Hydrocortisone hemisuccinate (Hydrocortisone 21-hemisuccinate), a physiological glucocorticoid, is an orally active steroidal anti-in ammatory agent (SAID). Hydrocortisone hemisuccinate inhibits proinflammatory cytokine activity, with IC50s of 6.7 and 21.4 μM for IL-6 and IL-3, respectively. Hydrocortisone hemisuccinate can be used for the research of ulcerative colitis (UC).

IC_{50} & Target	IL-6	IL-3
	6.7 μM (IC_{50})	21.4 μM (IC_{50})

In Vitro	Hydrocortisone hemisuccinate inhibits IL-6 and IL-3 bioactivity, with IC_{50}s of 6.7 and 21.4 μM, respectively, and shows no cytotoxic effects on IL-6-independent MH60 cells[3]. Hydrocortisone hemisuccinate (0.12-60 μM; 72 h) inhibits phytohemagglutinin (PHA) response in peripheral lymphocytes (PBL) and T-lymphocytes cultures[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Hydrocortisone hemisuccinate (30 mg/kg; p.o. twice daily for 5 d) reduces the weight loss and increases the food intake in mice[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague-Dawley rats (200-220 g, 10-11 weeks) are induced colitis[2]
Dosage:	30 mg/kg
Administration:	P.o. twice daily for 5 days
Result:	Significantly decreased the disease activity index (DAI) scores and myeloperoxidase (MPO) activity compared to the 2, 4, 6-trinitrobenzenesulfonic acid (TNBS) group. Increased the body weight.

CUSTOMER VALIDATION

- Biomed Pharmacother. 2022 Jun 7;152:113243.

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REFERENCES

[1]. Kang BS, et, al. Inhibitory effects of anti-inflammatory drugs on interleukin-6 bioactivity. Biol Pharm Bull. 2001 Jun;24(6):701-3.

[2]. You YC, et, al. In vitro and in vivo application of pH-sensitive colon-targeting polysaccharide hydrogel used for ulcerative colitis therapy. Carbohydr Polym. 2015 Oct 5;130:243-53.

[3]. Langhoff E, et, al. The immunosuppressive potency in vitro of physiological and synthetic steroids on lymphocyte cultures. Int J Immunopharmacol. 1987;9(4):469-73.

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