Beclometasone dipropionate

Cat. No.: HY-13571A

CAS No.: 5534-09-8

Molecular Formula: $C_{28}H_{37}ClO_7$

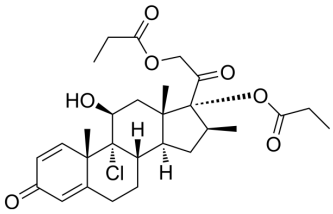
Molecular Weight: 521.04

Target: Glucocorticoid Receptor; Reactive Oxygen Species; NO Synthase

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

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 (191.92 mM)

H_2O : < 0.1 mg/mL (ultrasonic) (insoluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.9192 mL	9.5962 mL	19.1924 mL
5 mM	0.3838 mL	1.9192 mL	3.8385 mL
10 mM	0.1919 mL	0.9596 mL	1.9192 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 (4.80 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.80 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Beclometasone dipropionate, the proagent of Beclometasone, is an orally active and potent glucocorticoid recepter agonist. Beclometasone dipropionate acts via a glucocorticoid receptor and suppresses inflammation and hyperproliferation. Beclometasone dipropionate can be used for asthma [1][2].

IC_{50} & Target

iNOS

In Vitro

Beclometasone dipropionate (1-100 nM; 20 min) inhibits STAT-1 expression and reduces the levels of iNOS, ROS and NT

generated by rhIL-17A in 16HBE cells[2].

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

Western Blot Analysis[2]

Cell Line:	16HBE cells
Concentration:	1, 10 and 100 nM
Incubation Time:	20 min
Result:	Reduced the levels of iNOS, ROS and NT generated by rhIL-17A.

In Vivo

Beclometasone dipropionate (150 μg/kg; nebulization; male BALB/c mice) relieves asthma and decreases total cell number and relative eosinophil number[1].

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

Animal Model:	Ten-week-old male Balb/c mice[2].
Dosage:	5 mg/kg (100 μg/ml for 60 min).
Administration:	Orally at 24 h and 1 h before the LPS aerosol.
Result:	Significantly ($P < 0.05$) inhibited the decrease of IL-10 level in BAL fluid induced by LPS exposure. Markedly reduced the release of both MMP-2 and MMP-9.

Animal Model:	Male BALB/c mice with asthma[1]
Dosage:	150 μg/kg
Administration:	Nebulization
Result:	Decreased total cell number and relative eosinophil number in BALF.

CUSTOMER VALIDATION

- Sci Total Environ. 2021, 147288.
- Ind Eng Chem Res. 2019 Aug; 58 (3):16843-16857.
- Institute of Pharmaceutical Science Faculty of Life Sciences and Medicine King's College London. 2018, Oct.

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REFERENCES

[1]. Hrvać B, et, al. Applicability of an ultrasonic nebulization system for the airways delivery of beclomethasone dipropionate in a murine model of asthma. Pharm Res. 2006 Aug;23(8):1765-75.

[2]. Montalbano AM, et, al. Beclomethasone dipropionate and formoterol reduce oxidative/nitrosative stress generated by cigarette smoke extracts and IL-17A in human bronchial epithelial cells. Eur J Pharmacol. 2013 Oct 15;718(1-3):418-27.

Caution: Product has not been fully validated for medical applications. For research use only.

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