

# Dexamethasone

Catalog No: tcsc1505



## Available Sizes

Size: 1g

Size: 5g



## Specifications

**CAS No:** 50-02-2

**Formula:**  $C_{22}H_{29}FO_5$

**Pathway:** GPCR/G Protein;Autophagy;Autophagy

**Target:** Glucocorticoid Receptor;Autophagy;Mitophagy

**Purity / Grade:** >98%

**Solubility:** DMSO : 10 mg/mL (21.16 mM; Need ultrasonic)

**Storage Instruction:** Powder : -20°C for 3 years; 4°C for 2 years  
In solvent : -80°C for 6 months ; -20°C for 1 month

**Alternative Names:** Hexadecadrol;Prednisolone F

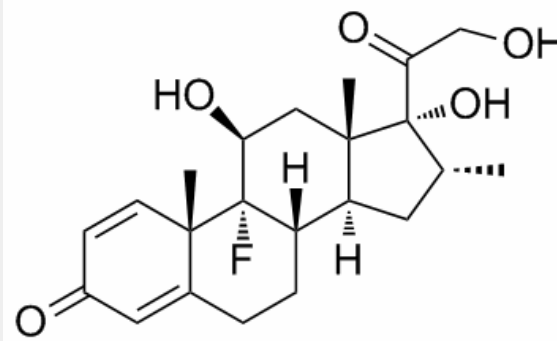
**Observed Molecular Weight:** 392.46

**References:**

- [1]. Eckhardt M, et al. 8-(3-(R)-aminopiperidin-1-yl)-7-but-2-ynyl-3-methyl-1-(4-methyl-quinazolin-2-ylmethyl)-3,7-dihydropurine-2,6-dione (BI 1356), a highly potent, selective, long-acting, and orally bioavailable DPP-4 inhibitor for the treatment of type 2 d
- [2]. Thomas L, et al. (R)-8-(3-amino-piperidin-1-yl)-7-but-2-ynyl-3-methyl-1-(4-methyl-quinazolin-2-ylmethyl)-3,7-dihydro-purine-2,6-dione (BI 1356), a novel xanthine-based dipeptidyl peptidase 4 inhibitor, has a superior potency and longer duration of action
- [3]. Schurmann C, et al. The dipeptidyl peptidase-4 inhibitor linagliptin attenuates inflammation and accelerates epithelialization in wounds of diabetic ob/ob mice. *J Pharmacol Exp Ther.* 2012 Jul;342(1):71-80.
- [4]. Huan Y, et al. The dual DPP4 inhibitor and GPR119 agonist HBK001 regulates glycemic control and beta cell function ex and in vivo. *Sci Rep.* 2017 Jun 28;7(1):4351.

## Product Description

Dexamethasone is a glucocorticoid receptor agonist. IC50 & Target: Glucocorticoid receptor[1] In Vitro: Dexamethasone regulates several transcription factors, including activator protein-1, nuclear factor-AT, and nuclear factor-kB, leading to the activation and repression of key genes involved in the inflammatory response[1]. Dexamethasone potently inhibits granulocyte-macrophage colony stimulating factor (GM-CSF) release from A549 cells with EC50 of 2.2 nM. Dexamethasone (EC50=36 nM) induces transcription of the  $\beta$ 2-receptor is found to correlate with glucocorticoid receptor (GR) DNA binding and occurred at 10-100 fold higher concentrations than the inhibition of GM-CSF release. Dexamethasone (IC50=0.5 nM) inhibits a  $3 \times \kappa B$  (NF- $\kappa B$ , I $\kappa B\alpha$ , and I- $\kappa B\beta$ ), which is associated with inhibition of GM-CSF release[2]. In Vivo: It has previously been reported that treatment with Dexamethasone at a dose of 2x5 mg/kg efficiently inhibits lipopolysaccharide (LPS)-induced inflammation. In our experimental system, treatment with a single dose of Dexamethasone 10 mg/kg (i.p.) significantly decreases recruitment of granulocytes as well as spontaneous production of oxygen radicals compared with animals expose to LPS and injected with solvent alone (saline). The effects are statistically significant when administered both 1 h before and 1 h after inhalation of LPS. The number of granulocytes in BALF decreased to levels comparable to healthy animals (given an aerosol of water)[3]. Rats treated with Dexamethasone consume less food and weighed less than control rats. Treated rats also weigh less than pair-fed animals though their food intake is similar. Five days of Dexamethasone injection result in a significant increase in both the liver mass (+42%) and the liver to body weight ratio (+65%). The wet weight of gastrocnemius muscle decreases 20% after 5 days of treatment, but it remains unaffected relative to body weight (g/100 g body weight), indicating that muscle weight loss paralleled body weight loss[4].



Protocol		DMSO : 10 mg/mL (21.16 mM; Need ultrasonic)		
Preparing Stock Solution	Volume / Mass	1 mg	5 mg	10 mg
	Concentration			
	1mM	2.1162 mL	10.5811 mL	21.1622 mL
	5mM	0.4232 mL	2.1162 mL	4.2324 mL
	10mM	0.2116 mL	1.0581 mL	2.1162 mL

All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!