Vamorolone

Cat. No.: HY-109017

CAS No.: 13209-41-1

Molecular Formula: $C_{22}H_{28}O_4$

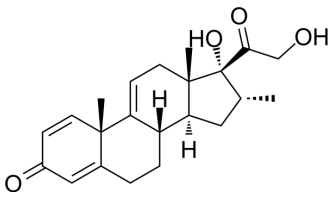
Molecular Weight: 356.46

Target: Glucocorticoid Receptor; Mineralocorticoid Receptor; NF-κB

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	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (175.34 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8054 mL	14.0268 mL	28.0536 mL
	5 mM	0.5611 mL	2.8054 mL	5.6107 mL
	10 mM	0.2805 mL	1.4027 mL	2.8054 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 (5.84 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.84 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.84 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Vamorolone (VBP15) is a first-in-class, orally active dissociative steroidal anti-inflammatory agent and membrane-stabilizer. Vamorolone improves muscular dystrophy without side effects. Vamorolone shows potent NF-κB inhibition and substantially reduces hormonal effects[1][2].

In Vitro

Vamorolone (VBP15)? inhibits TNFα-induced pro-inflammatory NF-κB signaling in C2C12 muscle cells at 1 nM or more. Vamorolone binds the glucocorticoid receptor (GR) and mineralocorticoid receptor (MR) with similar affinity[1].

	?Vamorolone (0.1, 1μM; 30 minutes) reduces production of IL1βand CCL5 inflammatory mediators in primary human macrophages[2]. ?Vamorolone is a first-in-class mineralocorticoid receptor (MR) antagonist/dissociative glucocorticoid receptor (GR) ligand[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Vamorolone (5-30 mg/kg; cherry syrup) shows a superior side effect profile compared to pharmacological glucocorticoids in mdx mice[1]. ?Vamorolone (30 mg/kg; orally; daily for 20 days) reduces CNS Inflammation in murine experimental autoimmune encephalomyelitis[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 mice (experimental autoimmune encephalomyelitis)[2]
Dosage:	30 mg/kg
Administration:	Orally; daily for 20 days (starting one day prior to MOG 33-55 peptide immunization and continuing)
Result:	Reduced CNS inflammation in murine experimental autoimmune encephalomyelitis.

REFERENCES

[1]. Heier CR, et al. VBP15, a novel anti-inflammatory and membrane-stabilizer, improves muscular dystrophy without side effects. EMBO Mol Med. 2013 Oct;5(10):1569-85.

[2]. Dillingham BC, et al. VBP15, a novel anti-inflammatory, is effective at reducing the severity of murine experimental autoimmune encephalomyelitis. Cell Mol Neurobiol. 2015 Apr;35(3):377-387.

[3]. Heier CR, et al. Vamorolone targets dual nuclear receptors to treat inflammation and dystrophic cardiomyopathy. Life Sci Alliance. 2019 Feb 11;2(1). pii: e201800186.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA