Fluocinolone (Acetonide)

Cat. No.: HY-B0415

CAS No.: 67-73-2

Molecular Formula: $C_{24}H_{30}F_2O_6$

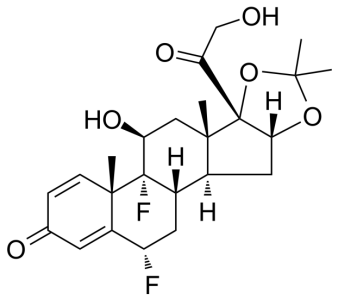
Molecular Weight: 452.49

Target: Glucocorticoid Receptor; Wnt

Pathway: Immunology/Inflammation; Vitamin D Related/Nuclear Receptor; Stem Cell/Wnt

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 : ≥ 31 mg/mL (68.51 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.2100 mL	11.0500 mL	22.0999 mL
5 mM	0.4420 mL	2.2100 mL	4.4200 mL
10 mM	0.2210 mL	1.1050 mL	2.2100 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 (4.60 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.60 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.60 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fluocinolone is a glucocorticoid glucocorticoid receptor agonist. Fluocinolone is effective in preventing both lipid accumulation and inflammation. Fluocinolone can promote the proliferation of DPCs and has the potential role in repairing injured pulp tissues. Fluocinolone can be used to study the prevention of chemotherapy-induced peripheral neuropathy caused by Paclitaxel (HY-B0015)[1][2][3][4].

In Vitro

Fluocinolone (0.1-50 μg/mL, 2 days) improves foam cell survival in THP-1 cells[1].

Fluocinolone (0.1-50 μg/mL, 2 days) inhibits infammatory cytokines secretion and reduces cholesteryl ester accumulation[1].
Fluocinolone (0.1-100 μmol/L, 24 h) promotes the proliferation of DPCs[2].
Fluocinolone (1-10 μmol/L, 7 days) promotes the expressions of BSP, OCN, DSPP, and Wnt4, and up-regulates Wnt4 and the dentin-specific marker dentin sialophosphoprotein[2].

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

Cell Proliferation Assay[2]

Cell Line:	DCPs
Concentration:	0.1 μmol/L, 1 μmol/L, 10 μmol/L, 20 μmol/L, 40 μmol/L, 60 μmol/L, 100 μmol/L
Incubation Time:	24 h
Result:	Significantly promoted the growth rate of DPCs of a low concentration.

Western Blot Analysis[2]

Cell Line:	DCPs
Concentration:	1 μmol/L, 10 μmol/L
Incubation Time:	7 days
Result:	Showed higher expressions of DSPP and Wnt4 protein than negative control.

In Vivo

Fluocinolone (500 μg/kg, Intraperitoneal injection, once a day for 2 weeks) prevents development of significant peripheral neuropathy in a mouse model of PTX-induced[3].

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

Animal Model:	PTX-induced peripheral neuropathy model [3]
Dosage:	500 μg/kg
Administration:	Intraperitoneal injection (i.p.)
Result:	Prevented a marked reduction in intraepidermal nerve fibers density in the plantar surface of the hind paws.

REFERENCES

[1]. Nguyen L T H, et al. The potential of fluocinolone acetonide to mitigate inflammation and lipid accumulation in 2D and 3D foam cell cultures [J]. BioMed Research International, 2018, 2018.

[2]. Liu Z, et al. Fluocinolone acetonide promotes the proliferation and mineralization of dental pulp cells [J]. Journal of endodontics, 2013, 39(2): 217-222.

[3]. Cetinkaya-Fisgin A, et al. Identification of fluocinolone acetonide to prevent paclitaxel-induced peripheral neuropathy [J]. Journal of the Peripheral Nervous System, 2016, 21(3): 128-133.

[4]. Nehmé A, et al. Glucocorticoids with different chemical structures but similar glucocorticoid receptor potency regulate subsets of common and unique genes in human trabecular meshwork cells [J]. BMC medical genomics, 2009, 2(1): 1-14.

[5]. http://en.wikipedia.org/wiki/Fluocinolone_acetonide

[6]. Nehme, A., et al., Glucocorticoids with different chemical structures but similar glucocorticoid receptor potency regulate subsets of common and unique genes in human trabecular meshwork cells. BMC Med Genomics, 2009. 2: p. 58.

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

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