Fluorometholone acetate

Cat. No.: HY-B1471

CAS No.: 3801-06-7

Molecular Formula: $C_{24}H_{31}FO_5$

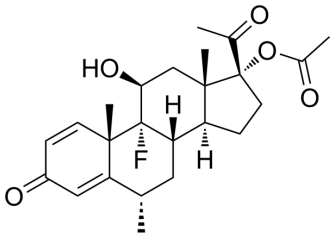
Molecular Weight: 418.5

Target: Carbonic Anhydrase

Pathway: Metabolic Enzyme/Protease

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (238.95 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3895 mL	11.9474 mL	23.8949 mL
	5 mM	0.4779 mL	2.3895 mL	4.7790 mL
	10 mM	0.2389 mL	1.1947 mL	2.3895 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 (4.97 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.97 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.97 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fluorometholone acetate is a synthetic glucocorticoid corticosteroid and a corticosteroid ester. Fluorometholone acetate potently inhibits carbonic anhydrase (CA) with IC_{50}s of 2.18 μM and 17.5 μM for hCA-I and hCA-II, respectively. Fluorometholone acetate has anti-inflammatory effect and has the potential for external ocular inflammation research[1][2][3].

IC_{50} & Target

CA

In Vitro

For Fluorometholone acetate, a K_i value from Lineweaver-Burk plots is obtained as 1.044 μM (noncompetitive) for hCA-I and

	9.98 μM (non-competitive) for hCA-II[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Hourly topical administration of 0.1% Fluorometholone acetate ophthalmic suspension produced, on the average, a 47% reduction in the polymorphonuclear leukocytes invading the cornea during an experimentally induced inflammatory keratitis in New Zealand albino rabbits (1.5-2.0 kg). Fluorometholone acetate (0.1%) formulated as a high-viscosity carbomer gel and applied at three-hour intervals reduced invading leukocytes in the cornea an average of 48%, an effect not significantly different from hourly administration of the suspension[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Am Chem Soc. 2021 Oct 14.

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REFERENCES

[1]. A Kupferman, et al. Fluorometholone acetate. A new ophthalmic derivative of fluorometholone. Arch Ophthalmol. 1982 Apr;100(4):640-1.

[2]. Zuhal Alım, et al. Some Anti-Inflammatory Agents Inhibit Esterase Activities of Human Carbonic Anhydrase Isoforms I and II: An In Vitro Study. Chem Biol Drug Des. 2015 Oct;86(4):857-63.

[3]. H M Leibowitz, et al. Fluoro metholone acetate: clinical evaluation in the treatment of external ocular inflammation. Ann Ophthalmol. 1984 Dec;16(12):1110-5.

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