Clobetasol propionate

Cat. No.: HY-13600

CAS No.: 25122-46-7

Molecular Formula: $C_{25}H_{32}ClFO_5$

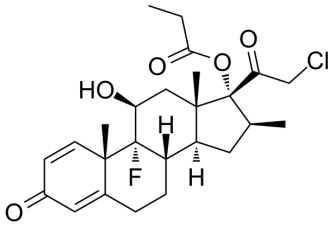
Molecular Weight: 466.97

Target: Cytochrome P450

Pathway: Metabolic Enzyme/Protease

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 (214.15 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1415 mL	10.7073 mL	21.4147 mL
	5 mM	0.4283 mL	2.1415 mL	4.2829 mL
	10 mM	0.2141 mL	1.0707 mL	2.1415 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 (5.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.35 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Clobetasol propionate is a potent and selective CYP3A5 inhibitor with an IC_{50} of 0.206 μM. Clobetasol propionate has no inhibiting on CYP3A4 or other major CYPs. Clobetasol propionate is a corticosteroid and has the potential for psoriasis and other dermatoses research[1][2][3].

IC_{50} & Target

CYP3A5	CYP3A4
0.206 μM (IC_{50})	15.6 μM (IC_{50})

In Vitro

Clobetasol propionate has an IC_{50} of 15.6 μM for CYP3A4[1].

Clobetasol propionate (1 μM; 24 hours) selectively inhibits CYP3A5 and does not increase the protein level of CYP3A4.

	Clobetasol propionate does not affect cell growth in any cell line (AsPC-1 wild-type (WT), AsPC-1$^{CYP3A5-/-}$ cells with CYP3A5 overexpression ("3A5$^{-/-}$ + 3A5^{OE}" cells), and AsPC-1$^{CYP3A5-/-}$ cells with CYP3A4 overexpression ("3A5$^{-/-}$ + 3A4^{OE}" cells))[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Clobetasol propionate (applied topically; daily for 14 days) reduces the epidermal thickness of both normal and psoriatic skin in human psoriatic skin-SCID mouse transplant model topical application[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. William C Wright, et al. Clobetasol Propionate Is a Heme-Mediated Selective Inhibitor of Human Cytochrome P450 3A5. J Med Chem. 2020 Feb 13;63(3):1415-1433.

[2]. Steven R Feldman, et al. Topical clobetasol propionate in the treatment of psoriasis: a review of newer formulations. Am J Clin Dermatol. 2009;10(6):397-406.

[3]. M Zeigler, et al. Anti-CD11a ameliorates disease in the human psoriatic skin-SCID mouse transplant model: comparison of antibody to CD11a with Cyclosporin A and clobetasol propionate. Lab Invest. 2001 Sep;81(9):1253-61.

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