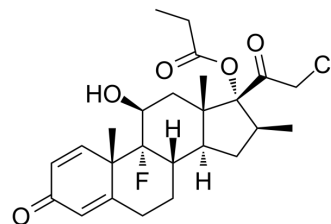


Clobetasol propionate

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 Concentration	Mass		
		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

- 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
- 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 IC₅₀ 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]}.

IC₅₀ & Target

CYP3A5 0.206 μM (IC ₅₀)	CYP3A4 15.6 μM (IC ₅₀)
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In Vitro

Clobetasol propionate has an IC₅₀ 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.
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Caution: Product has not been fully validated for medical applications. For research use only.

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