Maxacalcitol

Cat. No.: HY-32339

CAS No.: 103909-75-7

Molecular Formula: $C_{26}H_{42}O_4$

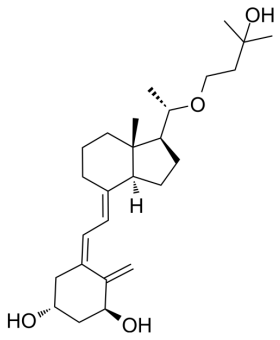
Molecular Weight: 418.61

Target: VD/VDR

Pathway: Vitamin D Related/Nuclear Receptor

Storage: 4°C, protect from light, stored under nitrogen

* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (119.44 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3889 mL	11.9443 mL	23.8886 mL
	5 mM	0.4778 mL	2.3889 mL	4.7777 mL
	10 mM	0.2389 mL	1.1944 mL	2.3889 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: ≥ 1.67 mg/mL (3.99 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.67 mg/mL (3.99 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (3.99 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Maxacalcitol (22-Oxacalcitriol), a vitamin D3 (HY-15398) analog, is an orally active VDR agonist. Maxacalcitol has a limited calcemic effect. Maxacalcitol has the potential for psoriasis and hyperparathyroidism research[1][2][3].

In Vitro

Maxacalcitol (22-Oxacalcitriol; 100 nM; for 24 h) markedly increases the expression of LL-37 mRNA in Ca9-22 cells and modestly but significantly increases in HSC-2, HSC-3, and HSC-4 cells[1].

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

RT-PCR[1]

Cell Line:	Human gingival/oral epithelial cells
Concentration:	100 nM
Incubation Time:	24 h
Result:	Markedly increased the expression of LL-37 mRNA 77-fold in human gingival epithelial Ca9-22 cells and modestly but significantly increased in human oral epithelial HSC-2, HSC-3, and HSC-4 cells.

In Vivo

Maxacalcitol (22-Oxacalcitriol; oral gavage; 15 μg/kg/day; 14 days) followed by GSK 269962 at a single dose of 10 mg/kg, leads to a statistically significant reduction of intercontraction interval and bladder compliance, and an increase in DO index, without any effect on ANVC, FNVC, and VTNVC[2].

Maxacalcitol in a dose of 30 but not 15 μg/kg/day induced reduction in detrusor overactivity(DO) index, non-voiding contractions frequency (FNVC), and amplitude (ANVC), while increasing volume threshold to elicit non-voiding contractions (VTNVC)[2].

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

Animal Model:	Female Wistar rats (weighting 200-225 g)[2]
Dosage:	15 μg/kg
Administration:	Oral gavage; daily; 14 days
Result:	Followed by GSK 269962 at a single dose of 10 mg/kg, led to a statistically significant reduction of intercontraction interval and bladder compliance, and an increase in DO index, without any effect on ANVC, FNVC, and VTNVC.

CUSTOMER VALIDATION

- Int J Mol Sci. 2017 Dec 19;18(12). pii: E2764.
- Eur J Pharmacol. 2016 Oct 5;788:98-103.
- J Dermatol Sci. 2019 Apr;94(1):244-251.

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REFERENCES

[1]. Hiroyuki Tada, et al. Vitamin D3 analog maxacalcitol (OCT) induces hCAP-18/LL-37 production in human oral epithelial cells. Biomed Res. 2016;37(3):199-205.

[2]. Andrzej Wróbel, et al. The Influence of Maxacalcitol, Vitamin D3 Analog, on Detrusor Overactivity in Conscious Rats. Urology. 2016 Jul:93:224.e7-224.e15.

[3]. Masaru Karakawa, et al. Effects of maxacalcitol ointment on skin lesions in patients with psoriasis receiving treatment with adalimumab. J Dermatol. 2016 Nov;43(11):1354-1357.

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

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