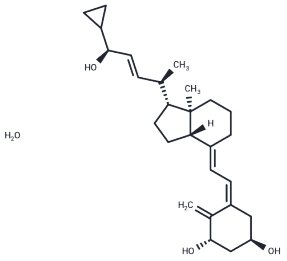
Data Sheet (Cat.No.TQ0244)

TargetMol

Calcipotriol monohydrate

Chemical Properties



CAS No. : 147657-22-5

Formula: C27H42O4

Molecular Weight: 430.62

Storage: Powder: -20°C for 3 years
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Calcipotriol monohydrate is an analog of Vitamin D3 with a high affinity for the vitamin D receptor. Calcipotriol monohydrate can be used for studies about psoriasis.
Targets(IC50)	Vitamin
In vitro	Calcipotriol monohydrate (100, 10, and 1 ng/mL) significantly upregulated the expression of NKp30 on the surface of NK cells after 4 h incubation[1]. When NHEK cells are not stimulated with IL-17A or IL-22, Calcipotriol monohydrate slightly enhances (0.2 nM) IL-8 mRNA expression or has no effect (2-20 nM). The addition of IL-17A and IL-22 markedly increased the mRNA expression of IL-8, confirming our previous study. This enhanced IL-8 mRNA expression is suppressed by Calcipotriol monohydrate (2, 20 and 40 nM) in a dose dependent manner[2].
In vivo	The weight gain is significantly smaller in the groups treated with Diclofenac plus Calcipotriol monohydrate (p=0.018) and Diclofenac plus DFMO plus Calcipotriol monohydrate (p=0.002) compare with placebo (linear regression model)[3].
Cell Research	Normal human epidermal keratinocytes are grown in serum-free keratinocyte growth medium Epilife and used at the third passage in all experiments. The growth supplement is omitted 48 h before experiments. As a control, IL-17A and IL-22 are either added or not added to the cells. Cultured NHEK cells are stimulated with IL-17A (200 ng/mL) and/or IL-22 (200 ng/mL) followed by co-incubation in the presence or absence of Calcipotriol at 0.2-40 nM to test its modulatory effect. Cells are harvested 3 days later and subjected to real-time qPCR. Culture supernatants are also collected and frozen at -80°C until used for ELISA [1].
Animal Research	The 160 female SKH-1 hairless mice (6-7 weeks of age) are used. After UV treatment, mice without tumors are randomly divided into five groups, four chemoprevention groups (Diclofenac plus DFMO; Diclofenac plus Calcipotriol; DFMO plus calcitriol; and Diclofenac plus DFMO plus Calcipotriol) and one placebo group (skin lotion). The mice are treated with test mixtures once a day, five days a week, for a total of 17 weeks. The test mixtures are applied topically on the dorsal surface of the mice. Ten microliters are applied by a pipette after which the mixture is rubbed onto the skin. This corresponded to the following doses of each active substance in the treatments: 100 μg/week for Diclofenac (30 mg/g undiluted), 0.166 μg/week for Calcitriol (50 μg/g undiluted), and 463.3 μg/week for DFMO (139 mg/g undiluted) [3].

Solubility Information

Solubility	Ethanol: 95 mg/mL (220.61 mM),Sonication is recommended. DMSO: 95 mg/mL (220.61 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (7.66 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3222 mL	11.6112 mL	23.2223 mL
5 mM	0.4644 mL	2.3222 mL	4.6445 mL
10 mM	0.2322 mL	1.1611 mL	2.3222 mL
50 mM	0.0464 mL	0.2322 mL	0.4644 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Al-Jaderi Z, et al. Effects of vitamin D3, calcipotriol and FTY720 on the expression of surface molecules and cytolytic activities of human natural killer cells and dendritic cells. Toxins (Basel). 2013 Oct 28;5(11):1932-47.
Sakabe JI, et al. Calcipotriol Increases hCAP18 mRNA Expression but Inhibits Extracellular LL37 Peptide Production in IL-17/IL-22-stimulated Normal Human Epidermal Keratinocytes. Acta Derm Venereol. 2014 Sep;94(5):512-6.
Pommergaard HC, et al. Combination chemoprevention with diclofenac, calcipotriol and difluoromethylornithine inhibits development of non-melanoma skin cancer in mice. Anticancer Res. 2013 Aug;33(8):3033-9.