Calcifediol

Cat. No.: HY-32351

CAS No.: 19356-17-3

Molecular Formula: $C_{27}H_{44}O_2$

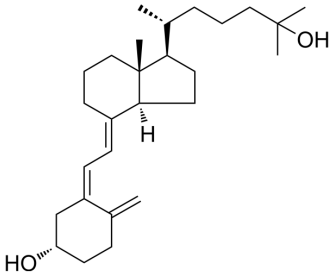
Molecular Weight: 400.64

Target: VD/VDR; Endogenous Metabolite

Pathway: Vitamin D Related/Nuclear Receptor; 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 (249.60 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4960 mL	12.4800 mL	24.9601 mL
	5 mM	0.4992 mL	2.4960 mL	4.9920 mL
	10 mM	0.2496 mL	1.2480 mL	2.4960 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 (6.24 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.19 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.19 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Calcifediol (25-hydroxy Vitamin D3), a major circulating metabolite of vitamin D3, is a potent VDR inhibitor[1][2].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

Calcifediol in either liposomes or ethanolic solution has no effect on the release of the proinflammatory cytokine KC from Pseudomonas-infected murine epithelial cells. Treatment of infected, human bronchial 16-HBE cells with Calcifediol liposomes results in a significant reduction in bacterial survival[1].

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

CUSTOMER VALIDATION

- Nat Chem Biol. 2022 Aug 18.
- Proc Natl Acad Sci U S A. 2022 Apr 12;119(15):e2117004119.
- Int J Mol Sci. 2017 Dec 19;18(12). pii: E2764.
- Front Pharmacol. 2020 Mar 31;11:200.
- Sci Rep. 2022 Feb 22;12(1):3014.

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REFERENCES

[1]. Castoldi A, et al. Calcifediol-loaded liposomes for local treatment of pulmonary bacterial infections. Eur J Pharm Biopharm. 2016 Nov 22.

[2]. Wei Zheng, et al. Vitamin D-induced vitamin D receptor expression induces tamoxifen sensitivity in MCF-7 stem cells via suppression of Wnt/β-catenin signaling. Biosci Rep. 2018 Dec 7;38(6):BSR20180595.

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