Paricalcitol

Cat. No.: HY-50919

CAS No.: 131918-61-1

Molecular Formula: $C_{27}H_{44}O_3$

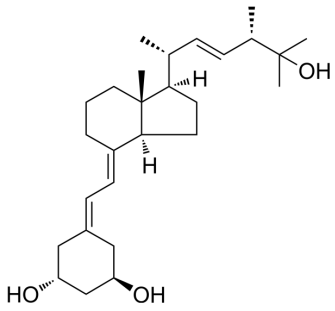
Molecular Weight: 416.64

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 : 100 mg/mL (240.02 mM; Need ultrasonic)

Ethanol : 12.5 mg/mL (30.00 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4002 mL	12.0008 mL	24.0015 mL
5 mM	0.4800 mL	2.4002 mL	4.8003 mL
10 mM	0.2400 mL	1.2001 mL	2.4002 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.00 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Paricalcitol, a vitamin D analogue, is a vitamin D receptor agonist, used for the prevention and treatment of secondary hyperparathyroidism (excessive secretion of parathyroid hormone) associated with chronic renal failure.

In Vitro

Paricalcitol (3×10^{-8} M; HP + PC) produces a significant reduction in calcification relative to the observed in cells in HP medium. Paricalcitol causes a reduction in the levels of nuclear β-catenin to a level similar to that observed in control cells[1].

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

In Vivo

Paricalcitol (300 ng/kg/day) significantly decreases Tau, and prevents LV dysfunction in mice. Paricalcitol reduces mRNA expression of ANP, fibronectin and collagen III in the TAC-pari mice[2].

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

PROTOCOL

Animal Administration [2]	After TAC or sham surgery, a subset of the mice is treated with paricalcitol, a selective vitamin D receptor activator, which activates the VDR, at a final dose of 300 ng/kg/day. Paricalcitol is dissolved in a 95% propylene glycol and 5% ethyl alcohol solution. Mice are intraperitoneally injected with paricalcitol (or vehicle only) three times per week on Monday, Wednesday and Friday for five consecutive weeks. An established anti-hypertrophic and anti-fibrotic treatment, namely the angiotensin II receptor blocker (ARB) losartan is also included. Previous experiments have shown it is feasible and efficacious to dissolve losartan in the drinking water at a concentration of 30 mg/kg/day; mice are treated for five consecutive weeks. So, in total eight groups are studied. Sham (n=10), TAC (n=10), Sham + losartan (Sham-los, n=10), TAC + losartan (TAC-los, n=10), Sham + paricalcitol (Sham-pari, n=10), TAC + paricalcitol (TAC-pari, n=10), Sham + paricalcitol + losartan (Sham-combi, n=10) and TAC + paricalcitol + losartan (TAC-combi, n=10). MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Adv Sci (Weinh). 2023 Dec 25:e2305563.
- Biomed Pharmacother. 2020 May;125:109528.
- Antioxidants (Basel). 2023 Aug 18;12(8):1634.
- Int J Mol Sci. 2017 Dec 19;18(12). pii: E2764.
- J Pharm Biomed Anal. 2020 Apr 15;182:113139.

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REFERENCES

[1]. Martinez-Moreno JM, et al. In vascular smooth muscle cells paricalcitol prevents phosphate-induced Wnt/beta-catenin activation. Am J Physiol Renal Physiol. 2012 Aug 8.

[2]. Meems LM, et al. The vitamin D receptor activator paricalcitol prevents fibrosis and diastolic dysfunction in a murine model of pressure overload. J Steroid Biochem Mol Biol. 2012 Jul 16;132(3-5):282-289.

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