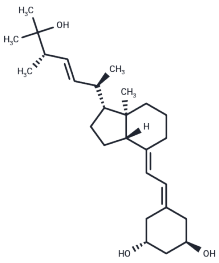
Data Sheet (Cat.No.TQ0200)

TargetMol

Paricalcitol

Chemical Properties



CAS No. : 131918-61-1

Formula: C27H44O3

Molecular Weight: 416.64

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

Biological Description

Description	Paricalcitol is a selective vitamin D receptor agonist and a vitamin D analog. Paricalcitol potently inhibits the synthesis and secretion of parathyroid hormone (PTH) and is commonly used in studies of secondary hyperparathyroidism in patients with chronic kidney disease.
Targets(IC50)	Others,Vitamin
In vitro	**Methods**: Human umbilical vein endothelial cells (HUVECs) were pretreated with different concentrations of Paricalcitol (50-500 nM) for 24 hours. The medium was then replaced and 100 μM H_2O_2 was added for 3 hours. Cell viability was assessed using the MTT assay. **Results**: At a concentration of 500 nM, post-injury treatment with Paricalcitol significantly increased cell viability.[1]
In vivo	**Methods**: To validate the role of Paricalcitol in CPPD-induced acute kidney injury (AKI), a single intraperitoneal dose of Paricalcitol (0.3 μg/kg) was administered to C57BL/6 mice. Three days later, CPPD (20 mg/kg) was administered intraperitoneally to induce infectious AKI. **Results**: Paricalcitol pretreatment significantly elevated levels of GSH, SOD, GPX4, CAT, and T-AOC, enhancing renal antioxidant defense. [2] **Methods**: To investigate the effects of Paricalcitol on intimal hyperplasia and stenosis, female Wistar Kyoto rats underwent femoral artery wire-induced endarterectomy (left side) with right-side sham surgery as control. Intraperitoneal administration of Paricalcitol (750 ng/kg) commenced immediately postoperatively, administered every other day for 2 weeks. **Results**: The Paricalcitol group showed a trend toward reduced intima-media ratio (0.17) and stenosis rate (28.3%), though neither reached statistical significance. [3] **Methods**: Male Sprague-Dawley rats underwent four-vessel occlusion (10 min) to establish a global cerebral ischemia model. Paricalcitol (1 μg/kg) was administered intraperitoneally at 5 min, 1 day, 2 days, and 3 days post-ischemia, with observation continuing until day 4 post-ischemia. **Results**: The 4-day survival rate was 100% (8/8) in the Paricalcitol group and 62.5% (5/8) in the control group. [4]
Animal Research	After TAC or sham surgery, a subset of the mice is treated with paricalcitol 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 were intraperitoneally injected

Animal Research	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) [2].

Solubility Information

Solubility	H2O: Insoluble, Ethanol: 12 mg/mL (28.8 mM),Sonication is recommended. DMSO: 140 mg/mL (336.02 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: < 10 mg/mL (24 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+90% Corn Oil: 3.3 mg/mL (7.92 mM),Sonication is recommended. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10 mg/mL (24 mM),Suspension. *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	2.4002 mL	12.0008 mL	24.0015 mL
5 mM	0.480 mL	2.4002 mL	4.8003 mL
10 mM	0.240 mL	1.2001 mL	2.4002 mL
50 mM	0.048 mL	0.240 mL	0.480 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

Köksal MM, Şekerler T, Çevik Ö, Şener A. Paricalcitol protects against hydrogen peroxide-induced injury in endothelial cells through suppression of apoptosis. Exp Biol Med (Maywood). 2023 Jan;248(2):186-192.
Wang S, Huang S, Liu X, He Y, Liu Y. Paricalcitol Ameliorates Acute Kidney Injury in Mice by Suppressing Oxidative Stress and Inflammation via Nrf2/HO-1 Signaling. Int J Mol Sci. 2023 Jan 4;24(2):969.
Baeza C, Pintor-Chocano A, Carrasco S, Sanz A, Ortiz A, Sanchez-Niño MD. Paricalcitol Has a Potent Anti-Inflammatory Effect in Rat Endothelial Denudation-Induced Intimal Hyperplasia. Int J Mol Sci. 2024 Apr 28;25(9):4814.
Kim SW, Oh JS, Park J, Jeong HH, Oh YM, Choi S, Choi KH. Neuroprotective effect of paricalcitol in a rat model of transient global cerebral ischemia. Int J Emerg Med. 2020 Jun 10;13(1):30.

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