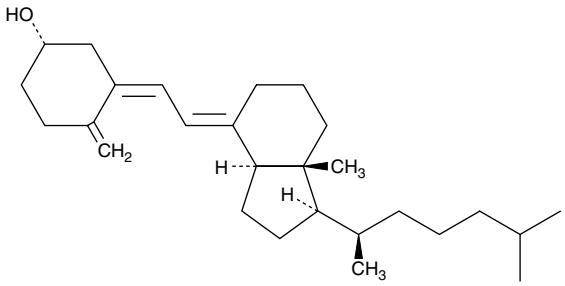
Product Information

Vitamin D_3

Item No. 11792

CAS Registry No.: 67-97-0
Formal Name: 3Z-[2E-[(1R,3aS,7aR)-1S-[1R,5-dimethylhexyl]octahydro-7a-methyl-4H-inden-4-ylidene]ethylidene]-4-methylene-cyclohexanol
Synonyms: Arachitol, Cholecalciferol, Delsterol, Granuvit D_3, Lutavit D, NSC 375571, Quintox, Ricketon, Trivitan
MF: $C_{27}H_{44}O$
FW: 384.6
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 213, 265 nm



Laboratory Procedures

For long term storage, we suggest that vitamin D_3 be stored as supplied at -20°C. It should be stable for at least two years.

Vitamin D_3 is supplied as a crystalline solid. A stock solution may be made by dissolving the vitamin D_3 in the solvent of choice. Vitamin D_3 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of vitamin D_3 in ethanol, DMSO, and DMF is approximately 30, 3, and 25 mg/ml, respectively.

Vitamin D_3 is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Vitamin D aids in the absorption of calcium and has central roles in bone formation and maintenance, hypertension, cancer and immunity.[1,2] Vitamin D_3 is an intermediate form of vitamin D which is obtained from dietary sources, such as fish, or through the conversion of 7-dehydrocholesterol by ultraviolet light.[3] Vitamin D_3 is subsequently metabolized to 25-hydroxyvitamin D_3 and the active form 1,25-dihydroxyvitamin D_3 by cytochrome P450 isoforms in the liver.[1,4] 1,25-Dihydroxyvitamin D_3 binds and activates the vitamin D receptor, which dimerizes with retinoid X receptor isoforms to alter gene expression.[5]

References

1. Holick, M.F. Vitamin D deficiency. *N. Engl. J. Med.* **357(3)**, 266-281 (2007).
2. Peterlik, M., Boonen, S., Cross, H.S., *et al.* Vitamin D and calcium insufficiency-related chronic diseases: An emerging world-wide public health problem. *Int. J. Environ. Res. Public Health* **6**, 2585-607 (2009).
3. Rosen, C.J. Vitamin D insufficiency. *N. Engl. J. Med.* **364(3)**, 248-54 (2011).
4. Houghton, L.A. and Vieth, R. The case against ergocalciferol (vitamin D_2) as a vitamin supplement. *Am. J. Clin. Nutr.* **84**, 694-697 (2006).
5. Kato, S., Kim, M.-S., Yamaoka, K., *et al.* Mechanisms of transcriptional repression by 1,25$(OH)_2$ vitamin D. *Curr. Opin. Nephrol. Hypertens.* **16**, 297-304 (2007).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/11792

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will meet our specifications at the time of delivery.

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have **any obligation or liability**, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a refund of the purchase price, or at Cayman's option, the replacement, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our Warranty and Limitation of Remedy located on our website and in our catalog.

Copyright Cayman Chemical Company, 05/24/2012

Cayman Chemical

Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com