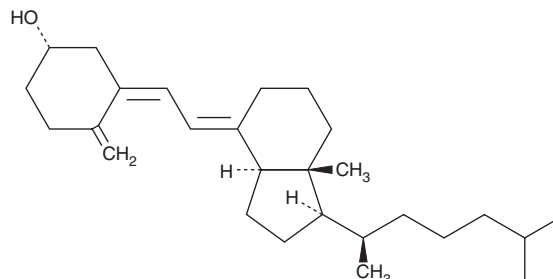


PRODUCT INFORMATION



Vitamin D₃ 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: Cholecalciferol, NSC 375571
MF: C₂₇H₄₄O
FW: 384.6
Purity: ≥98%
UV/Vis.: λ_{max}: 213, 265 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Animal/Lanolin



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Vitamin D₃ is supplied as a crystalline solid. A stock solution may be made by dissolving the vitamin D₃ in the solvent of choice, which should be purged with an inert gas. Vitamin D₃ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of vitamin D₃ in these solvents is approximately 30, 3, and 25 mg/ml, respectively.

Description

Vitamin D₃ is a biologically inactive precursor to calcitriol (Item No. 71820) that is converted to active metabolites *in vivo*.^{1,2} Vitamin D₃ is obtained from dietary sources, including fish, or formed in the epidermis via photolytic conversion of 7-dehydro cholesterol (Item No. 14612) to previtamin D₃ by UVB radiation, followed by isomerization to vitamin D₃.^{3,4} Vitamin D₃ can then be converted to 25-hydroxy vitamin D₃ (Item No. 9000683) in the liver by the cytochrome P450 (CYP) isoform CYP2R1 before being converted to calcitriol by CYP27B1 in the kidney.^{2,3} Formulations containing vitamin D₃ have been used in the treatment of osteoporosis.

References

1. Lehmann, B., Genehr, T., Knuschke, P., *et al.* UVB-induced conversion of 7-dehydrocholesterol to 1α,25-dihydroxyvitamin D₃ in an in vitro human skin equivalent model. *J. Invest. Dermatol.* **117**(5), 1179-1185 (2001).
2. Holick, M.F. Vitamin D deficiency. *N. Engl. J. Med.* **357**(3), 266-281 (2007).
3. Rosen, C.J. Vitamin D insufficiency. *N. Engl. J. Med.* **364**(3), 248-254 (2011).
4. Chen, T.C., Chimeh, F., Lu, Z., *et al.* Factors that influence the cutaneous synthesis and dietary sources of vitamin D. *Arch. Biochem. Biophys.* **460**(2), 213-217 (2007).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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