

PRODUCT INFORMATION

1,24-dihydroxy Vitamin D₃ (hydrate)

Item No. 12079

CAS Registry No.: 93129-94-3
Formal Name: 4-methylene-5Z-[2E-[(3aS)-octahydro-1R-[4R-hydroxy-1R,5-dimethylhexyl]-7aR-methyl-4H-inden-4-ylidene]ethylidene]-1R,3S-cyclohexanediol, monohydrate

Synonyms: Bonalfa, Curatoderm, 1 α ,24(R)-Dihydroxycholecalciferol, PRI 2191, Tacalcitol, TV 02

MF: C₂₇H₄₄O₃ • H₂O

FW: 434.7

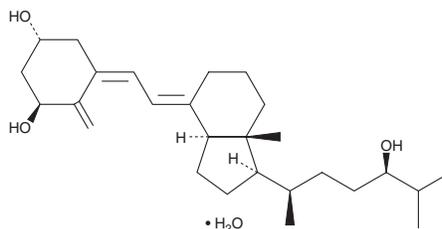
Purity: ≥98%

UV/Vis.: λ_{max}: 212, 264 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



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

Laboratory Procedures

1,24-dihydroxy Vitamin D₃ (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the 1,24-dihydroxy vitamin D₃ (hydrate) in the solvent of choice, which should be purged with an inert gas. 1,24-dihydroxy Vitamin D₃ (hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 1,24-dihydroxy vitamin D₃ (hydrate) in these solvents is approximately 20 mg/ml.

1,24-dihydroxy Vitamin D₃ (hydrate) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 1,24-dihydroxy vitamin D₃ (hydrate) should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 1,24-dihydroxy Vitamin D₃ (hydrate) has a solubility of approximately 0.3 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Vitamin D aids in the absorption of calcium and has central roles in bone formation and maintenance, hypertension, cancer, and immunity.^{1,2} In addition, the active form of vitamin D, 1,25-dihydroxy vitamin D₃, decreases the proliferation and increases differentiation of keratinocytes.³ 1,24-dihydroxy Vitamin D₃ is an analog of 1,25-dihydroxy vitamin D₃ which, when used in a 4 μg/g ointment, safely and effectively suppresses psoriasis.⁴ It also is effective at increasing the time interval between phototherapy cycles when ultraviolet light is used for psoriasis.⁵ 1,24-dihydroxy Vitamin D₃ inhibits the growth of both normal and psoriatic human keratinocytes (IC₅₀ ~ 10 nM) via the vitamin D receptor.⁶ It also suppresses the production of RANTES and IL-8 by human dermal fibroblasts and reduces cutaneous lymphocyte-associated antigen on CD4⁺ T cells, impairing migration and skin infiltration.^{7,8}

References

- Holick, M.F. *N. Engl. J. Med.* **357**(3), 266-281 (2007).
- Peterlik, M., Boonen, S., Cross, H.S., et al. *Int. J. Environ. Res. Public Health* **6**, 2585-607 (2009).
- Bikle, D.D. *J. Nutr.* **125**, 1709S-1714S (1995).
- Leone, G. and Pacifico, A. *Acta. Biomed.* **76**, 13-19 (2005).
- Prignano, F., Buggiani, G., and Lotti, T. *Acta. Biomed.* **80**, 51-56 (2009).
- Matsumoto, K., Hashimoto, K., Kiyoki, M., et al. *J. Dermatol.* **17**, 97-103 (1990).
- Fukuoka, M., Ogino, Y., Sato, H., et al. *Br. J. Pharmacol.* **124**(7), 1433-1438 (1998).
- Yamanaka, K.-I., Kakeda, M., Kitagawa, H., et al. *Br. J. Dermatol.* **162**(6), 1206-1215 (2010).

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.

WARRANTY AND LIMITATION OF REMEDY
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