
Product Data Sheet

Product Name: Tacalcitol monohydrate

Cat. No.: GC37714

Chemical Properties

Cas. No. 93129-94-3

SMILES CC([C@@H](CC[C@H]([C@@H](CC[C@]1/2[H])
[C@@]1(C)CCCC2=C/C=C3C[C@@H](C[C@H](C/3=C)O)O)C)O)C.[H]O[H]

Formula C₂₇H₄₆O₄

M.Wt 434.65

Solubility DMF: 20 mg/ml, DMSO: 20 mg/ml, Ethanol: 20
 mg/ml, Ethanol: PBS (pH 7.2) (1:3): 0.30 mg/ml

Store
 Storage at -
 20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available sizes: ship with RT, or blue ice upon request.

Structure

Background

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}

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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1.Holick, M.F.Vitamin D deficiencyN. 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 problemInt. J. Environ. Res. Public Health6(10)2585-2607(2009) 3.Bikle, D.D.1,25(OH)2D3-regulated human keratinocyte proliferation and differentiation: Basic studies and their clinical applicationJ. Nutr.1251709S-1714S(1995) 4.Leone, G., and Pacifico, A.Profile of clinical efficacy and safety of topical tacalcitolActa Biomed.76(1)13-19(2005) 5.Prignano, F., Buggiani, G., and Lotti, T.Clinical evaluation of topical tacalcitol efficacy in extending the remission period between nb-UVB phototherapy cycles in psoriatic patientsActa Biomed.8051-56(2009) 6.Matsumoto, K., Hashimoto, K., Kiyoki, M., et al.Effect of 1,24R-dihydroxyvitamin D3 on the growth of human keratinocytesJ. Dermatol.17(2)97-103(1990) 7.Fukuoka, M., Ogino, Y., Sato, H., et al.Regulation of RANTES and IL-8 production in normal human dermal fibroblasts by active vitamin D3 (tacalcitol)Br. J. Pharmacol.124(7)1433-1438(1998) 8.Yamanaka, K.I., Kakeda, M., Kitagawa, H., et al.1,24-Dihydroxyvitamin D3 (tacalcitol) prevents skin T-cell infiltrationBr. J. Dermatol.162(6)1206-1215(2010)

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