

Product Data Sheet

Product Name: Ercalcidiol

Cat. No.: GC13804

Chemical Properties

Cas. No. 21343-40-8

Chemical Name (1S,3Z)-3-[(2E)-2-[(1R,3aS,7aR)-1-[(E,2R,5S)-6-hydroxy-5,6-dimethylhept-3-en-2-yl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidenecyclohexan-1-ol

SMILES CC(C=CC(C)C(C)(C)O)C1CCC2C1(CCCC2=CC=C3CC(CCC3=C)O)C

Formula $C_{28}H_{44}O_2$ M.Wt 412.66

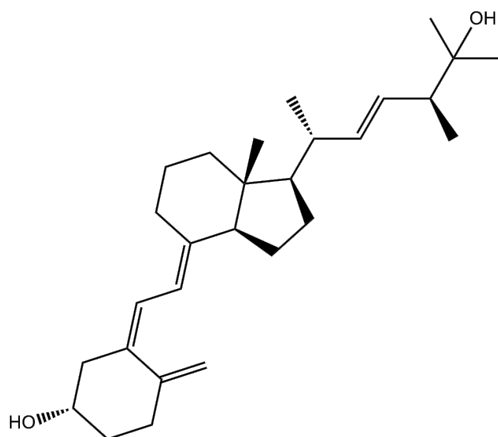
Solubility DMF: 20 mg/ml, DMSO: 20 mg/ml, Ethanol: 20 mg/ml, Ethanol: PBS (pH 7.2) (1:2): 0.3 mg/ml

Storage Store at -20°C, unstable in solution, ready to use.

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 size: ship with RT, or blue ice upon request.

Structure



Background

Ercalcidiol is a metabolite of vitamin D₂ that reflects the nutritional status of vitamin D in the body [1].

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

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Compared to vitamin D₃ metabolites, Ercalcidiol has a shorter half-life and exhibits lower binding affinity to vitamin D-binding protein. Due to its relatively weaker potency, higher doses are required when used for therapeutic purposes^[2]. Ercalcidiol is commonly employed for monitoring the efficacy of vitamin D₂ treatment and managing disorders of calcium and phosphate homeostasis^[3,4].

In vitro, Ercalcidiol (292.5nM) was incubated as a substrate in a renal homogenate system from rachitic chickens for 2h, where it was successfully metabolized by 1 α -hydroxylase to produce 1 α ,25-(OH)₂D₂^[5].

References:

- [1] TUGCU G, CHAREHSAZ M, AYDIN A. Toxicological evaluation of ergocalciferol, cholecalciferol, and their metabolites by a category approach[J]. Drug and Chemical Toxicology, 2021, 44(6): 661-667.
- [2] NEWMAN M S, BRANDON T R, GROVES M N, et al. A liquid chromatography/tandem mass spectrometry method for determination of 25-hydroxy vitamin D₂ and 25-hydroxy vitamin D₃ in dried blood spots: a potential adjunct to diabetes and cardiometabolic risk screening[J]. Journal of Diabetes Science and Technology, 2009, 3(1): 156-162.
- [3] ADAMS J S, SHIEH A, BISHOP C W. Calcifediol as a therapeutic[M]//Feldman and Pike's Vitamin D. 5th ed. Cambridge: Academic Press, 2024: 457-474.
- [4] JIN Z, BERTHOLF R L, YI X. Advances and challenges in the measurement of 1, 25-dihydroxyvitamin D: A comprehensive review[J]. Critical Reviews in Clinical Laboratory Sciences, 2023, 60(7): 535-548.
- [5] HUGHES M R, BAYLINK D J, JONES P G, et al. Radioligand receptor assay for 25-hydroxyvitamin D₂/D₃ and 1 α , 25-dihydroxyvitamin D₂/D₃[J]. The Journal of Clinical Investigation, 1976, 58(1): 61-70.

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