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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

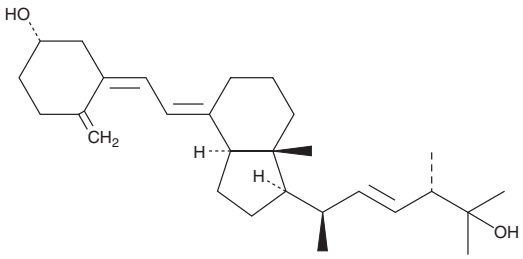
linkedin.com/company/szaboscandic

PRODUCT INFORMATION

25-hydroxy Vitamin D_2

Item No. 12078

CAS Registry No.:	21343-40-8
Formal Name:	4-methylene-3-[(2E)-2-[(1R,3aS,7aR)-octahydro-1-[(1R,2E,4S)-5-hydroxy-1,4,5-trimethyl-2-hexenyl]-7a-methyl-4H-inden-4-ylidene]ethylidene]-cyclohexanol
Synonyms:	Ercalcidiol, 25-Hydroxyergocalciferol, 25(OH)-Vitamin D_2
MF:	$C_{28}H_{44}O_2$
FW:	412.7
Purity:	≥98%
UV/Vis.:	λ_{max}: 211, 264 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

25-hydroxy Vitamin D_2 is supplied as a crystalline solid. A stock solution may be made by dissolving the 25-hydroxy vitamin D_2 in the solvent of choice, which should be purged with an inert gas. 25-hydroxy Vitamin D_2 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 25-hydroxy vitamin D_2 in these solvents is approximately 20 mg/ml.

25-hydroxy Vitamin D_2 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 25-hydroxy vitamin D_2 should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 25-hydroxy Vitamin D_2 has a solubility of approximately 0.3 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

25-hydroxy Vitamin D_2 is a metabolite of vitamin D_2 (Item No. 11791).[1] It is formed from vitamin D_2 by the cytochrome P450 (CYP) isoforms CYP2R1 and CYP27A1, which have 25-hydroxylase activity, and is bound to vitamin D binding protein (DBP) and albumin in the liver, then secreted into the bloodstream.[2] 25-hydroxy Vitamin D_2 is transported to the kidney, where it is preferentially 24-hydroxylated by CYP24A1 to produce 24,25-dihydroxy vitamin D_2.[2] It can also be hydroxylated by CYP27B1 to produce 1,25-dihydroxy vitamin D_2.[1,2] Serum levels of 25-hydroxy vitamin D_2 have been used as a marker of vitamin D status.[3]

References

1. DeLuca, H.F., Sicinski, R.P., Tanaka, Y., *et al.* Biological activity of 1,25-dihydroxyvitamin D_2 and 24-epi-1,25-dihydroxyvitamin D_2. *Am. J. Physiol.* **254(4 Pt 1)**, E402-E406 (1998).
2. Bikle, D. Vitamin D: Production, metabolism, and mechanisms of action. *Endotext*. Feingold, K.R., Anawalt, B., Boyce, A., *et al.*, *MDText.com/Inc.* (2000).
3. Saenger, A.K., Laha, T.J., Bremner, D.E., *et al.* Quantification of serum 25-hydroxyvitamin D_2 and D_3 using HPLC-tandem mass spectrometry and examination of reference intervals for diagnosis of vitamin D deficiency. *Am. J. Clin. Pathol.* **125(6)**, 914-920 (2006).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM