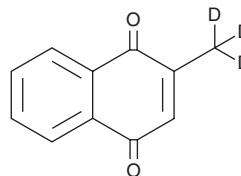


PRODUCT INFORMATION



Vitamin K₃-d₃ Item No. 43796

CAS Registry No.: 5172-16-7
Formal Name: 2-(methyl-d₃)-1,4-naphthalenedione
Synonym: Menadione-d₃
MF: C₁₁H₅D₃O₂
FW: 175.2
Chemical Purity: ≥98% (Vitamin K₃)
Deuterium
Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A 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

Vitamin K₃-d₃ is intended for use as an internal standard for the quantification of vitamin K₃ (Item No. 15950) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Vitamin K₃-d₃ is supplied as a solid. A stock solution may be made by dissolving the vitamin K₃-d₃ in the solvent of choice, which should be purged with an inert gas. Vitamin K₃-d₃ is sparingly soluble (1-10 mg/ml) in ethanol and DMSO.

Description

Vitamin K₃ is a synthetic form of vitamin K.¹ It is an inhibitor of human tissue transglutaminase 2 (TGM2; IC₅₀ = 2.2 μM). Vitamin K₃ induces cell death in six neuroblastoma cell lines (IC₅₀s = 3.18-7.09 μM), as well as human umbilical vein endothelial cells (HUVECs) and human dermal fibroblasts (HDFs; IC₅₀s = 6.1 and 18.05, respectively).² It decreases proliferation and inhibits migration in a wound healing assay in primary conjunctival fibroblasts when used at concentrations of 2, 4, or 6 mg/L.³ Vitamin K₃ (200 μM) reduces the levels of glutathione (GSH) and increases the levels of glutathione disulfide (GSSG) and oxidized NADPH in isolated rat hepatocytes.⁴

References

1. Lai, T.-S., Liu, Y., Tucker, T., *et al.* Identification of chemical inhibitors to human tissue transglutaminase by screening existing drug libraries. *Chem. Biol.* **15**(9), 969-978 (2008).
2. Kitano, T., Yoda, H., Tabata, K., *et al.* Vitamin K₃ analogs induce selective tumor cytotoxicity in neuroblastoma. *Biol. Pharm. Bull.* **35**(4), 617-623 (2012).
3. Pinilla, I., Izaquirre, L.B., Gonzalvo, F., *et al.* In vitro vitamin K3 effect on conjunctival fibroblast migration and proliferation. *ScientificWorldJournal* **2014**, (2014).
4. Gant, T.W., Rao, D.N., Mason, R.P., *et al.* Redox cycling and sulphhydryl arylation; their relative importance in the mechanism of quinone cytotoxicity to isolated hepatocytes. *Chem. Biol. Interact.* **65**(2), 157-173 (1988).

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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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