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# Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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## Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


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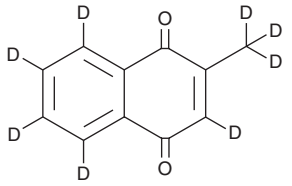
# PRODUCT INFORMATION

## Vitamin $K_3$-$d_8$

*Item No. 41285*

**CAS Registry No.:** 478171-80-1
**Formal Name:** 2-methyl-$d_3$-1,4-naphthalenedione-2,5,6,7,8-$d_5$
**Synonym:** Menadione-$d_8$
**MF:** $C_{11}D_8O_2$
**FW:** 180.2
**Chemical Purity:** ≥98% (Vitamin $K_3$)
**Deuterium Incorporation:** ≥99% deuterated forms ($d_1$-$d_8$); ≤1% $d_0$
**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 $K_3$-$d_8$ is intended for use as an internal standard for the quantification of vitamin $K_3$ (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 $K_3$-$d_8$ is supplied as a solid. A stock solution may be made by dissolving the Vitamin $K_3$-$d_8$ in the solvent of choice, which should be purged with an inert gas. Vitamin $K_3$-$d_8$ is sparingly soluble (1-10 mg/ml) in ethanol and DMSO.

### Description

Vitamin $K_3$ is a synthetic form of vitamin K.[1] It is an inhibitor of human tissue transglutaminase 2 (TGM2; $IC_{50}$ = 2.2 µM). Vitamin $K_3$ induces cell death in six neuroblastoma cell lines ($IC_{50}$s = 3.18-7.09 µM), as well as human umbilical vein endothelial cells (HUVECs) and human dermal fibroblasts (HDFs; $IC_{50}$s = 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 $K_3$ (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 $K_3$ 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 $K_3$ effect on conjunctival fibroblast migration and proliferation. *ScientificWorldJournal*, (2014).
4. Gant, T.W., Rao, D.N., Mason, R.P., *et al.* Redox cycling and sulphydryl arylation; their relative importance in the mechanism of quinone cytotoxicity to isolated hepatocytes. *Chem. Biol. Interact*. **65(2)**, 157-173 (1988).





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