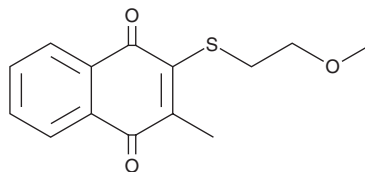


# PRODUCT INFORMATION



VK<sub>3</sub>-OCH<sub>3</sub>  
Item No. 21476

**CAS Registry No.:** 255906-59-3  
**Formal Name:** 2-[(2-methoxyethyl)thio]-3-methyl-1,4-naphthalenedione  
**Synonyms:** Vitamin K<sub>3</sub>-OCH<sub>3</sub>  
**MF:** C<sub>14</sub>H<sub>14</sub>O<sub>3</sub>S  
**FW:** 262.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 257 nm  
**Supplied as:** A crystalline 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

VK<sub>3</sub>-OCH<sub>3</sub> is supplied as a crystalline solid. A stock solution may be made by dissolving the VK<sub>3</sub>-OCH<sub>3</sub> in the solvent of choice, which should be purged with an inert gas. VK<sub>3</sub>-OCH<sub>3</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of VK<sub>3</sub>-OCH<sub>3</sub> in these solvents is approximately 5, 25, and 30 mg/ml, respectively.

VK<sub>3</sub>-OCH<sub>3</sub> is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, VK<sub>3</sub>-OCH<sub>3</sub> should first be dissolved in DMF and then diluted with the aqueous buffer of choice. VK<sub>3</sub>-OCH<sub>3</sub> has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

## Description

VK<sub>3</sub>-OCH<sub>3</sub> is an analog of vitamin K<sub>3</sub> (Item No. 15950) that has antiproliferative activities *in vitro*.<sup>1</sup> It preferentially decreases proliferation of IMR-32, LA-N-1, NB-39, and SK-N-SH neuroblastoma cells (IC<sub>50</sub>s = 2.43, 1.55, 10.69, and 3.45 μM, respectively) compared with non-cancerous HUVEC and HDF cells (IC<sub>50</sub>s = 26.24 and 87.11 μM, respectively). It increases heme oxygenase-1 (HO-1) and caveolin-1 levels, induces apoptosis, and halts the cell cycle at the G<sub>2</sub>/M phase in IMR-32 cells. VK<sub>3</sub>-OCH<sub>3</sub> also inhibits protein-tyrosine phosphorylase (PTPase) activity (IC<sub>50</sub> = 57.2 μM in a cell-free assay), induces protein-tyrosine phosphorylation in Hep3B hepatoma cells when used at a concentration of 50 μM, and inhibits the growth of Hep3B cells (IC<sub>50</sub> = 8.6 μM).<sup>2</sup>

## References

1. Kitano, T., Yoda, H., Tabata, K., *et al.* Vitamin K<sub>3</sub> analogs induce selective tumor cytotoxicity in neuroblastoma. *Biol. Pharm. Bull.* **35**(4), 617-623 (2012).
2. Nishikawa, Y., Wang, Z., Kerns, J., *et al.* Inhibition of hepatoma cell growth *in vitro* by arylating and non-arylated K vitamin analogs. Significance of protein tyrosine phosphatase inhibition. *J. Biol. Chem.* **274**(49), 34803-34810 (1999).

### 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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