



LKT Laboratories, Inc.

## Vitamin K3

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### Product Information

**Product ID** V3479  
**CAS No.** 58-27-5  
**Chemical Name** 2-Methyl-1,4-naphthalenedione

**Synonym** Menadione, Menaphthone, Kappaxin, Kayquinone, Thyloquinone, 2-Methyl-1,4-naphthoquinone

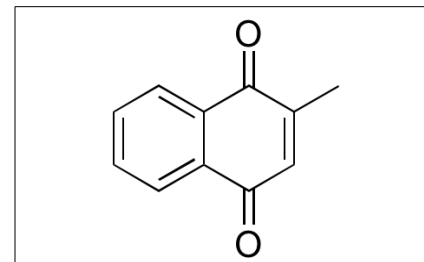
**Formula** C<sub>11</sub>H<sub>8</sub>O<sub>2</sub>  
**Formula Wt.** 172.18  
**Melting Point** 105-107 °C  
**Purity** ≥98%

**Solubility** Insoluble in water. Soluble in ethanol (16 mg/mL) and benzene. Slightly soluble in chloroform and carbon tetrachloride

**Store Temp** -20 °C

**Ship Temp** Ambient

**Description** Vitamin K3 is a synthetic analog of 1,4-naphthoquinone; it is also a precursor to vitamin K2. Vitamin K3 exhibits anticancer, neuromodulatory, and anti-inflammatory activities. In ovarian carcinoma cells, vitamin K3 induces caspase 8-dependent apoptosis, increases levels of ROS, and decreases levels of glutathione; additionally, vitamin K3 binds tubulin, inhibiting microtubule polymerization. In vitro, vitamin K3 also inhibits monoamine oxidases A and B (MAO-A/B). This compound increases ROS and inhibits leukotriene secretion by altering Ca<sup>2+</sup> influx and 5-lipoxygenase signaling in vitro.



**Bulk quantities available upon request**

Product ID	Size
V3479	10 g
V3479	25 g

**References** Kim YJ, Shin YK, Sohn DS, et al. Menadione induces the formation of reactive oxygen species and depletion of GSH-mediated apoptosis and inhibits the FAK-mediated cell invasion. *Naunyn Schmiedeberg's Arch Pharmacol.* 2014 Sep;387(9):799-809. PMID: 24879465.

Coelho Cerqueira E, Netz PA, et al. Molecular insights into human monoamine oxidase (MAO) inhibition by 1,4-naphthoquinone: evidences for menadione (vitamin K3) acting as a competitive and reversible inhibitor of MAO. *Bioorg Med Chem.* 2011 Dec 15;19(24):7416-24. PMID: 22071524.

Kawamura F, Nakanishi M, Hirashima N. Effects of menadione, a reactive oxygen generator, on leukotriene secretion from RBL-2H3 cells. *Biol Pharm Bull.* 2010;33(5):881-5. PMID: 20460770.

Acharya BR, Choudhury D, Das A, et al. Vitamin K3 disrupts the microtubule networks by binding to tubulin: a novel mechanism of its antiproliferative activity. *Biochemistry.* 2009 Jul 28;48(29):6963-74. PMID: 19527023.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.