



LKT Laboratories, Inc.

Terpinen-4-ol

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Product Information

Product ID T1968

CAS No. 562-74-3

Chemical Name

Synonym Terpineol, 4-Carvomenthenol

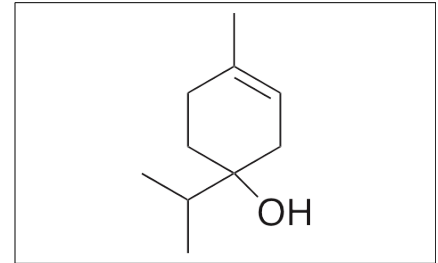
Formula C₁₀H₁₈O

Formula Wt. 154.25

Melting Point

Purity ≥98%

Solubility



Bulk quantities available upon request

Product ID	Size
T1968	5 g
T1968	25 g

Store Temp Ambient

Ship Temp Ambient

Description Terpinen-4-ol is a monoterpene originally found in many plants and is one of the primary active ingredients in tea tree oil. Terpinen-4-ol exhibits anticancer chemotherapeutic, anti-inflammatory, antibacterial, and antifungal activities. In leukemia cells, terpinen-4-ol induces release of cytochrome c and activation of caspase 8, resulting in autophagy, apoptosis, and cell death. In non-small cell lung cancer (NSCLC) cells, terpinen-4-ol induces cleavage of poly(ADP)-ribose polymerase (PARP), activates caspases 3 and 9, decreases mitochondrial membrane potential, increases the Bax/Bcl-2 ratio, and increases levels of p53, resulting in apoptosis and cell death. Additionally, this compound decreases myeloperoxidase activity and expression of MIP-2 and other cytokines in animal models of oral candidiasis. Terpinen-4-ol displays antimicrobial activity against gram positive and gram negative bacteria such as *Campylobacter* as well as fungi such as *Aspergillus* and *Fusarium*.

References Banjerdpongchai R, Khaw-On P. Terpinen-4-ol Induces Autophagic and Apoptotic Cell Death in Human Leukemic HL-60 Cells. *Asian Pac J Cancer Prev.* 2013;14(12):7537-42. PMID: 24460330.

Kurekci C, Padmanabha J, Bishop-Hurley SL, et al. Antimicrobial activity of essential oils and five terpenoid compounds against *Campylobacter jejuni* in pure and mixed culture experiments. *Int J Food Microbiol.* 2013 Sep 16;166(3):450-7. PMID: 24041998.

Ninomiya K, Hayama K, Ishijima SA, et al. Suppression of inflammatory reactions by terpinen-4-ol, a main constituent of tea tree oil, in a murine model of oral candidiasis and its suppressive activity to cytokine production of macrophages in vitro. *Biol Pharm Bull.* 2013;36(5):838-44. PMID: 23649340.

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Wu CS, Chen YJ, Chen JJ, et al. Terpinen-4-ol Induces Apoptosis in Human Nonsmall Cell Lung Cancer In Vitro and In Vivo. *Evid Based Complement Alternat Med.* 2012;2012:818261. PMID: 21760828.

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