

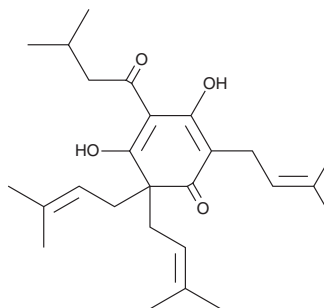
# PRODUCT INFORMATION



## Lupulone

Item No. 28481

**CAS Registry No.:** 468-28-0  
**Formal Name:** 3,5-dihydroxy-2,6,6-tris(3-methyl-2-buten-1-yl)-4-(3-methyl-1-oxobutyl)-2,4-cyclohexadien-1-one  
**MF:** C<sub>26</sub>H<sub>38</sub>O<sub>4</sub>  
**FW:** 414.6  
**Purity:** ≥95%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years  
**Item Origin:** Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Lupulone is supplied as a solid. A stock solution may be made by dissolving the lupulone in the solvent of choice, which should be purged with an inert gas. Lupulone is slightly soluble in methanol.

### Description

Lupulone is a beta-acid that has been found in the hop plant, *H. lupulus*, and has diverse biological activities, including antibacterial, antioxidant, and anticarcinogenic properties.<sup>1-3</sup> Lupulone is active against *B. subtilis* and *S. aureus* (MICs = 1 and 1.2 µg/ml, respectively), as well as *T. b. brucei* and *L. m. mexicana* (IC<sub>50</sub>s = 0.9 and 4.7 µg/ml, respectively).<sup>1,2</sup> It scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805) radicals in a cell-free assay and inhibits lipid peroxidation in rat brain homogenates (IC<sub>50</sub>s = 25 and 39 µM, respectively).<sup>4</sup> It reduces proliferation, migration, and capillary tube formation in human umbilical vein endothelial cells (HUVECs) when used at concentrations ranging from 2.5 to 50 µg/ml.<sup>5</sup> Lupulone (40 µg/ml) activates the extrinsic apoptotic death pathway in SW480 and SW620 colon cancer cells.<sup>3</sup>

### References

1. Teuber, M. and Schmalreck, A.F. Membrane leakage in *Bacillus subtilis* 168 induced by the hop constituents lupulone, humulone, isohumulone and humulinic acid. *Arch. Mikrobiol.* **94(2)**, 159-171 (1973).
2. Bocquet, L., Sahpaz, S., Bonneau, N., et al. Phenolic compounds from *Humulus lupulus* as natural antimicrobial products: New weapons in the fight against methicillin resistant *Staphylococcus aureus*, *Leishmania mexicana* and *Trypanosoma brucei* strains. *Molecules* **24(6)**, 1024 (2019).
3. Lamy, V., Roussi, S., Chaabi, M., et al. Lupulone, a hop bitter acid, activates different death pathways involving apoptotic TRAIL-receptors, in human colon tumor cells and in their derived metastatic cells. *Apoptosis* **13(10)**, 1232-1242 (2008).
4. Tagashira, M., Watanabe, M., and Uemitsu, N. Antioxidative activity of hop bitter acids and their analogues. *Biosci. Biotechnol. Biochem.* **59(4)**, 740-742 (1995).
5. Siegel, L., Mitermique-Grosse, A., Griffon, C., et al. Antiangiogenic properties of lupulone, a bitter acid of hop cones. *Anticancer Res.* **28(1A)**, 289-294 (2008).

#### 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.

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