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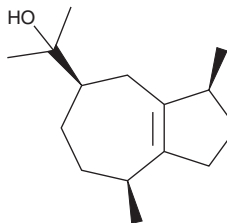
PRODUCT INFORMATION



(-)-Guaiol

Item No. 23172

CAS Registry No.: 489-86-1
Formal Name: (3S,5R,8S)-1,2,3,4,5,6,7,8-octahydro- $\alpha,\alpha,3,8$ -tetramethyl-5-azulenemethanol
Synonym: NSC 19941
MF: C₁₅H₂₆O
FW: 222.4
Purity: $\geq 95\%$
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

(-)-Guaiol is supplied as a solid. A stock solution may be made by dissolving the (-)-guaiol in the solvent of choice, which should be purged with an inert gas. (-)-Guaiol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of (-)-guaiol in these solvents is approximately 30 mg/ml.

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

Description

(-)-Guaiol is a sesquiterpene alcohol that has been found in several traditional Chinese medicinal plants and has antiproliferative, pro-autophagic, insect repellent, and insecticidal biological activities.¹⁻³ It selectively inhibits proliferation of A549 and H1299 non-small cell lung carcinoma (NSCLC) cells over BEAS-2B normal lung cells (IC₅₀s = 121.7, 211.5, and 297.1 μ M, respectively).¹ It also dose-dependently induces formation of DNA double-strand breaks (DSBs) and autophagy in A549 and H1299 cells and increases levels of microtubule-associated protein 1 light chain 3 isoform II (LC3-II). (-)-Guaiol (8 mg/kg three times per week) inhibits tumor growth in an NSCLC mouse xenograft model. It deters *A. aegypti* and *A. quadrimaculatus* mosquitoes from feeding on a synthetic blood substitute with a biting-deterrent index (BDI) of 0.82 when used at a concentration of 25 nmol per cm².² (-)-Guaiol is also lethal to fourth instar *M. separata* and third instar *P. xylostella* larvae (LD₅₀s = 0.07 and 8.9 mg/larva, respectively).³

References

1. Yang, Q., Wu, J., Luo, Y., et al. (-)-Guaiol regulates RAD51 stability via autophagy to induce cell apoptosis in non-small cell lung cancer. *Oncotarget* **7**(38), 62585-62597 (2016).
2. Ali, A., Tabanca, N., Demirci, B., et al. Chemical composition and biological activity of four salvia essential oils and individual compounds against two species of mosquitoes. *J. Agric. Food Chem.* **63**(2), 447-456 (2015).
3. Liu, T., Wang, C.-J., Xie, H.-Q., et al. Guaiol - a naturally occurring insecticidal sesquiterpene. *Nat. Prod. Commun.* **8**(10), 1353-1354 (2013).

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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