

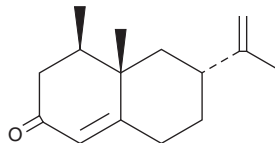
PRODUCT INFORMATION



(+)-Nootkatone

Item No. 24910

CAS Registry No.: 4674-50-4
Formal Name: (4R,4aS,6R)-4,4a,5,6,7,8-hexahydro-4,4a-dimethyl-6-(1-methylethenyl)-2(3H)-naphthalenone
MF: C₁₅H₂₂O
FW: 218.3
Purity: ≥98%
UV/Vis.: λ_{max}: 238 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

(+)-Nootkatone is supplied as a crystalline solid. A stock solution may be made by dissolving the (+)-nootkatone in the solvent of choice, which should be purged with an inert gas. (+)-Nootkatone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (+)-nootkatone in ethanol and DMF is approximately 33 mg/ml and approximately 20 mg/ml in DMSO.

(+)-Nootkatone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (+)-nootkatone should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. (+)-Nootkatone has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

(+)-Nootkatone is sesquiterpene ketone originally isolated from grapefruit juice and peel oil with diverse biological activity.^{1,2} It is lethal against ticks, fleas, and mosquitoes with LC₅₀ values of 0.0029, 0.0061, and 0.0046% w/v, respectively.² Pretreatment of wood with (+)-nootkatone reduces tunnel lengths, feeding, and survival rates in *C. formosanus* termites.³ (+)-Nootkatone (10-100 μM) dose-dependently activates AMPKα1 and AMPKα2 in C2C12 mouse myoblast lysate containing a substrate peptide.⁴ It dose-dependently inhibits platelet aggregation induced by collagen, thrombin (Item No. 13188), and arachidonic acid (Item No. 90010) when used at concentrations ranging from 10 to 100 μM with almost complete inhibition at the highest concentration.⁵ *In vivo*, (+)-nootkatone (3-30 mg/kg, p.o.) dose-dependently increases the length of tail bleeding time in mice. (+)-Nootkatone (0.1-0.3%, p.o.) dose-dependently reduces body weight and plasma glucose levels in mice fed a high-fat and high-sucrose diet.⁴ Formulations containing (+)-nootkatone have been used in the control of insects and ticks.

References

1. MacLeod, W.D., Jr. and Buigues, N.M. *J. Food Sci.* **29(5)**, 565 - 568 (2006).
2. Panella, N.A., Dolan, M.C., Karchesy, J.J., et al. *J. Med. Entomol.* **42(3)**, 352-358 (2005).
3. Maistrello, L., Henderson, G., and Laine, R.A. *Pest. Manag. Sci.* **59(1)**, 58-68 (2003).
4. Murase, T., Misawa, K., Haramizu, S., et al. *Am. J. Physiol. Endocrinol. Metab.* **299(2)**, E266-E275 (2010).
5. Seo, E.J., Lee, D.-U., Kwak, J.H., et al. *J. Ethnopharmacol.* **135(1)**, 48-54 (2011).

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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