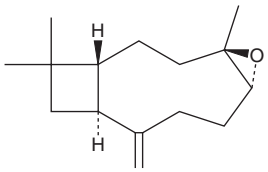
PRODUCT INFORMATION

(–)-Caryophyllene oxide

Item No. 21573

CAS Registry No.: 1139-30-6
Formal Name: (1R,6R,10S)-4R,12,12-trimethyl-9-methylene-5-oxatricyclo[8.2.0.04,6]dodecane
Synonyms: BCP oxide, β-Caryophyllene epoxide, β-Caryophyllene oxide
MF: $C_{15}H_{24}O$
FW: 220.4
Purity: ≥98%
UV/Vis.: λ_{max}: 242 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

(–)-Caryophyllene oxide is supplied as a crystalline solid. A stock solution may be made by dissolving the (–)-caryophyllene oxide in the solvent of choice. (–)-Caryophyllene oxide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of (–)-caryophyllene oxide in these solvents is approximately 30, 10, and 20 mg/ml, respectively.

(–)-Caryophyllene oxide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (–)-caryophyllene oxide should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. (–)-Caryophyllene oxide 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

(–)-Caryophyllene oxide is a bicyclic sesquiterpene and a metabolite of β-caryophyllene that has been found in *C. sativa* and has anticancer properties.[1,2] Unlike β-caryophyllene, (–)-caryophyllene oxide does not bind to the cannabinoid (CB) receptor CB_2 (K_i = >20 µM). It induces calcium currents in HL-60 cells expressing CB_2 receptors but also does so in CB_2-deficient cells. (–)-Caryophyllene oxide is cytotoxic to HepG2, AGS, HeLa, SNU-1 and SNU-16 cells (IC_{50}s = 3.95, 12.6, 13.55, 16.79, and 27.39 µM, respectively).[3] It is the volatile component of *C. sativa* sensed by narcotic detection dogs.[1] Formulations containing (–)-caryophyllene have been used as flavoring agents.

References

1. Gertsch, J., Leonti, M., Raduner, S., *et al.* Beta-caryophyllene is a dietary cannabinoid. *Proc. Natl. Acad. Sci. USA* **105(26)**, 9099-9104 (2008).
2. Fidyt, K., Fiedorowicz, A., Stradala, L., *et al.* β-caryophyllene and β-caryophyllene oxide-natural compounds of anticancer and analgesic properties. *Cancer Med.* **5(10)**, 3007-3017 (2016).
3. Jun, N.J., Mosaddik, A., Moon, J.Y., *et al.* Cytotoxic activity of β-caryophyllene oxide isolated from Jeju guava (*Psidium cattleianum Sabine*) leaf. *Rec. Nat. Prod.* **5(3)**, 242-246 (2011).

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