Natural Products

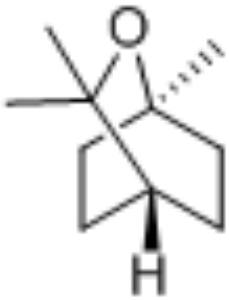
ChemFaces

Cineole Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Cineole



Catalog No.: CFN90545

Cas No.: 470-82-6

Purity: > 98%

M.F: $C_{10}H_{18}O$

M.W: 154.25

Physical Description: Oil

Synonyms: 1,3,3-Trimethyl-2-oxabicyclo[2.2.2]octane;1,8-Cineole;Eucalyptol; 1,8-Epoxy-p-menthane;1,8-Oxido-p-menthane.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Synthetic precursor compounds;
4. Intermediates & Fine Chemicals;
5. Others.

[Source]

The leaves of *Eucalyptus robusta Smith.*

[Biological Activity or Inhibitors]

1,8-Cineole (cineole), a terpenoid oxide present in many plant essential oils, displays an inhibitory effect on some types of experimental inflammation in rats, it also inhibits in mice, the acetic acid-induced increase in peritoneal capillary permeability and the chemical nociception induced by intraplantar formalin and intraperitoneal acetic acid;the inhibitory effects of cineole on the formation of prostaglandins and cytokines by stimulated monocytes in vitro, suggests that its potential beneficial use in therapy as an antiinflammatory and analgesic agent.[1]

1,8-Cineole is one of the effective substrates for CYP3A enzymes in rat and human liver microsomes.[2]

1,8-Cineole is moderately effective as a feeding repellent and highly effective as an ovipositional repellent against adultAedes aegypti (yellow fever mosquito), but does not exhibit any significant mosquito larvicidal activity. [3]

Eucalyptus oil and 1,8-cineole alone and in combination with chlorhexidine digluconate have antimicrobial efficacy against microorganisms grown in planktonic and biofilm culture.[4]

1,8-Cineole ameliorates cerulein-induced acute pancreatitis via modulation of cytokines, oxidative stress and NF-κB activity in mice.[5]

1,8-Cineole has suppression growth in the leukemia cell lines results from the induction of apoptosis.[6]

1,8-Cineole in either anesthetized or conscious rats elicits hypotension, this effect seems related to an active vascular relaxation rather than withdrawal of sympathetic tone.[7]

1,8-Cineole has antioxidative effects against 2,3,7,8-tetrachlorodibenzo-p-dioxin-induced oxidative stress in rats liver.[8]

Cineole exhibits an antinociceptive activity comparable to that of morphine.[9]

[Solvent]

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

[HPLC Method][10]

Mobile phase: Acetonitrile- H2O, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 213 nm.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

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[5] Lima P R, Melo T S D, Ítalo Bonfim de Oliveira, *et al. Life Sci., 2013, 92(24-26):1195-201.*

[6] Moteki H, Hibasami H, Yamada Y, *et al. Oncol. Rep., 2002, 9(4):757-60.*

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[8] Ciftci O, Ozdemir I, Tanyildizi S, *et al. Toxicol. Ind. Health, 2011, 27(5):447-53.*

[9] Liapi C, Anifandis G, Chinou I, *et al. Planta Med., 2007, 73(12):1247-54.*

[10] Ospina Salazar D I, Hoyos Sánchez R A, Orozco Sánchez F, *et al. Acta Biol. Colomb., 2015, 20(3):201-20.*

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