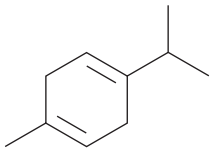
PRODUCT INFORMATION

γ-Terpinene

Item No. 23722

CAS Registry No.: 99-85-4
Formal Name: 1-methyl-4-(1-methylethyl)-1,4-cyclohexadiene
Synonym: NSC 21448
MF: $C_{10}H_{16}$
FW: 136.2
Purity: ≥95%
Supplied as: A neat oil
Storage: -20°C
Stability: ≥4 years



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

Description

γ-Terpinene is a monoterpene that has been found in various plants, including *C. sativa*, with diverse biological activities.[1-6] It scavenges 2,2'-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805) and 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonate) ($ABTS^+$) free radicals (IC_{50}s = 2.8 and 30 mM, respectively) and reduces hemolysis induced by AAPH (Item No. 82235) in isolated human erythrocytes.[2] γ-Terpinene reduces the growth of *T. evansi* in a concentration-dependent manner.[3] It increases membrane permeability and decreases growth of *X. oryzae* bacteria.[4] *In vivo*, γ-terpinene (100 mg/kg) reduces Triton WR1339-induced increases in serum cholesterol and triglyceride levels in rats.[5] It reduces paw edema induced by histamine, bradykinin (Item No. 15539), carrageenan, and prostaglandin E_2 (PGE_2; Item No. 14010) in mice.[6] It also inhibits fluid extravasation in a mouse model of acetic acid microvascular permeability and reduces neutrophil migration in lung in a mouse model of acute lung injury.

Reference

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2. Li, G.-X. and Liu, Z.-Q. Unusual antioxidant behavior of α- and γ-terpinene in protecting methyl linoleate, DNA, and erythrocyte. *J. Agric. Food Chem.* **57(9)**, 3943-3948 (2009).
3. Baldissera, M.D., Grando, T.H., Souza, C.F., *et al. In vitro* and *in vivo* action of terpinen-4-ol, γ-terpinene, and α-terpinene against *Trypanosoma evansi*. *Exp. Parasitol.* **162**, 43-48 (2016).
4. Yoshitomi, K., Taniguchi, S., Tanaka, K., *et al.* Rice terpene synthase 24 (OsTPS24) encodes a jasmonate-responsive monoterpene synthase that produces an antibacterial γ-terpinene against rice pathogen. *J. Plant Physiol.* **191(1)**, 120-126 (2016).
5. Takahashi, Y., Inaba, N., Kuwahara, S., *et al.* Effects of γ-terpinene on lipid concentrations in serum using Triton WR1339-treated rats. *Biosci. Biotechnol. Biochem.* **67(11)**, 2448-2450 (2003).
6. Ramalho, T.R., Oliveira, M.T., Lima, A.L., *et al.* Gamma-terpinene modulates acute inflammatory response in mice. *Planta. Med.* **81(14)**, 1248-1254 (2015).

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