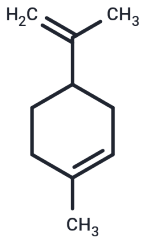
Data Sheet (Cat.No.T75431)

TargetMol

Limonene

Chemical Properties



CAS No. : 138-86-3

Formula: C10H16

Molecular Weight: 136.23

Storage: Pure form: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Limonene (Dipentene) is a monoterpene found in citrus plants such as lemon, orange, and grape, widely used in cosmetics and household products as a fragrance, with antimicrobial, antiproliferative, antioxidant, and anti-inflammatory properties.
Targets(IC50)	Reactive Oxygen Species,Antibacterial,ROS
In vitro	Limonene exerts anti-inflammatory effects by reducing pro-inflammatory cytokines (TNF-α, IL-1β, COX-2), inhibiting TLR4/NF-κB/AP-1 but not the IRF3 signaling pathway, and regulating oxidative stress through Nrf2 activation. [1] Limonene treatment inhibits UVB-induced α-MSH secretion and then suppresses melanocortin (POMC) by inhibiting p53 transcriptional activation. [2]
In vivo	Limonene (100 and 200 mg/kg, orally administered) in LPS mouse models mitigated the decline in renal function due to LPS induction, resulting in reduced serum urea and creatinine levels in mice. [1] Limonene (20 mg/kg, intrabitoneally administered) reduced serum and brain nitrite levels and decreased the expression of IL-1β and TNF-α in the hippocampus of MS-stressed mice. [3]

Solubility Information

Solubility	Ethanol: 80 mg/mL (587.24 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.3405 mL	36.7026 mL	73.4053 mL
5 mM	1.4681 mL	7.3405 mL	14.6811 mL
10 mM	0.7341 mL	3.6703 mL	7.3405 mL
50 mM	0.1468 mL	0.7341 mL	1.4681 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Kathem SH, et al. Limonene Exerts Anti-Inflammatory Effect on LPS-Induced Jejunal Injury in Mice by Inhibiting NF-κB/AP-1 Pathway. Biomolecules. 2024 Mar 12;14(3):334.
Yang F, Shen H, Huang T, et al.Flavonoid production in tomato mediates both direct and indirect plant defences against whiteflies in tritrophic interactions.Pest Management Science.2023
Kumar KJS, et al. Limonene protects human skin keratinocytes against UVB-induced photodamage and photoaging by activating the Nrf2-dependent antioxidant defense system. Environ Toxicol. 2022 Dec;37(12):2897-2909.
Lorigooini Z, et al. Limonene through Attenuation of Neuroinflammation and Nitrite Level Exerts Antidepressant-Like Effect on Mouse Model of Maternal Separation Stress. Behav Neurol. 2021 Jan 29;2021:8817309.