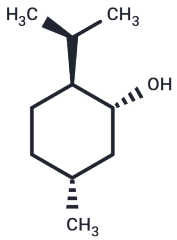
Data Sheet (Cat.No.T1407)

TargetMol

(-)-Menthol

Chemical Properties



CAS No. : 2216-51-5

Formula: C10H20O

Molecular Weight: 156.27

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	(-)-Menthol (Levomenthol) is a levo isomer of menthol, an organic compound made synthetically or obtained from peppermint or mint oils with flavoring and local anesthetic properties. When added to pharmaceuticals and foods, menthol functions as a fortifier for peppermint flavors. It also has a counterirritant effect on skin and mucous membranes, thereby producing a local analgesic or anesthetic effect.
Targets(IC50)	Opioid Receptor,Endogenous Metabolite,TRP/TRPV Channel
In vitro	(-)-Menthol induces cytotoxicity against murine leukemia WEHI-3 cells in vitro in a dosedependent manner. (-)-Menthol inhibits the growth of rat liver epithelial tumor cells and acts as a potent chemopreventive agent during DMBA initiation of rat mammary tumors. (-)-menthol inhibits N-acetyltransferase activity. It also is found to inhibit the DNA topoisomerase I, II alpha and beta and to promote NF-kappaB expression in human gastric cancer SNU-5 cells. Additionally, (-)-menthol induces human promyelocytic leukemia HL-60 cell death through the Ca2+ release from the endoplasmic reticulum[1].
In vivo	The effects of (-)-menthol on WEHI-3 cells in vivo (BALB/c mice) were also examined, and it was observed that the Mac-3 and CD11b markers were decreased, indicating inhibition of differentiation of the precursor of macrophage and granulocyte. The weights of liver and spleen samples from mice treated with (-)-menthol were found to be decreased compared to untreated animals. (-)-Menthol has been shown to be toxic in animals, but in humans, it is considered to be safe, with a small cardio-accelerating effect. At high doses (-)-menthol may exert a depressant effect on the central nervous system in rodents. (-)-menthol statistically decreases the weights of the liver and spleen in the examined animals and also decreases the percentage of MAC-3 and CD11b cells in the blood.[1].
Cell Research	Approximately 2x105 cells (WEHI-3) are incubated in 12-well plates containing medium for 24 h without (control) or with various concentrations (0, 25, 50, 75 and 100 μM) of (-)-menthol. The cells are harvested and washed with PBS before PI staining. The percentage of viable WEHI-3 cells is determined by trypan blue exclusion and flow cytometry. (Only for Reference)

Solubility Information

Solubility	H2O: 13 mg/mL (83.19 mM),Sonication is recommended. DMSO: 50 mg/mL (319.96 mM),Sonication is recommended. Ethanol: 29 mg/mL (185.58 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.3992 mL	31.9959 mL	63.9918 mL
5 mM	1.2798 mL	6.3992 mL	12.7984 mL
10 mM	0.6399 mL	3.1996 mL	6.3992 mL
50 mM	0.128 mL	0.6399 mL	1.2798 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.

Reference

Lu HF, et al. In Vivo. 2007, 21(2):285-9.