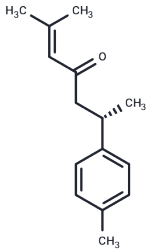
Data Sheet (Cat.No.T14317)

TargetMol

ar-Turmerone

Chemical Properties



CAS No. : 532-65-0

Formula: C15H20O

Molecular Weight: 216.32

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	ar-Turmerone is a natural volatile organic compound extracted from the rhizomes of turmeric (Curcuma longa). ar-Turmerone exhibits oral bioavailability and possesses biological activities such as antitumor, anti-inflammatory, antioxidant, and neuroprotective effects. ar-Turmerone exerts a positive regulatory effect on dendritic cells in mice. Ar-turmerone can induce neural stem cell proliferation both in vitro and in vivo, making it useful for research on neurological disorders. Ar-turmerone induces apoptosis in U937 cells.
Targets(IC50)	Apoptosis,Others
In vitro	Methods: ar-Turmerone (0, 50, 100, 200 μM) was added to U251, U87, and LN229 glioma cells, which were incubated for 48 hours; cell viability was assessed using the CCK-8 assay. Results: ar-Turmerone inhibited cell viability in a dose-dependent manner. [1] Methods: Primary rat hippocampal neurons were treated with ar-Turmerone (30, 100, 300 μM) for 1 hour, followed by treatment with Aβ25-35 (50 μM) for 24 hours. Cell viability was assessed using the MTT assay, and TNF-α, IFN-β, and iNOS levels were measured by ELISA. Results: ar-Turmerone restored cell viability in a dose-dependent manner and reduced TNF-α, IFN-β, and iNOS levels in a dose-dependent manner. [2] Methods: Primary fetal mouse (E14.5) cortical neural stem cells (containing FGF2) were treated with ar-Turmerone (1.56-25 μg/mL) for 72 h. Photographs were taken using a phase-contrast microscope, and cell proliferation was assessed by counting with ImageJ. Results: ar-Turmerone treatment significantly promoted neural stem cell proliferation, with a significant increase in cell numbers observed at concentrations ranging from 3.125 to 25 μg/mL, reaching a peak at 6.25 μg/mL. [3]
In vivo	Methods: BALB/c nude mice were inoculated with U251 cells in the right axilla. Once the tumor volume reached 40-60 mm^3, intraperitoneal injections of ar-Turmerone (40 mg/kg/day) were initiated and continued for 25 days. Results: ar-Turmerone significantly inhibited tumor growth, reduced tumor weight, and downregulated KI67/PCNA expression, with no significant hepatotoxicity or nephrotoxicity. [1] Methods: Male ICR mice received stereotaxic injections of Aβ1-42 into the hippocampus.

In vivo	ar-Turmerone (5, 10 mg/kg) was administered orally via gavage once daily for a total of 28 days, including 21 days prior to and 7 days following Aβ1-42 injection. Results: Oral administration of ar-Turmerone (5, 10 mg/kg) significantly improved learning and memory abilities, enhanced cholinergic function, and reduced hippocampal neuronal apoptosis. [2] Methods: To investigate the effects of ar-Turmerone on neurogenesis, adult male Wistar rats received a single intracerebroventricular injection of 3 mg ar-Turmerone (1 mg/μL dissolved in saline) into the right lateral ventricle, and brain tissue was harvested 7 days post-injection. Results: In vivo, a single intraventricular injection of ar-Turmerone activated endogenous neural stem cells, resulting in a significant increase in the number of DCX^+ cells in the SVZ region of the rat brain.[3]

Solubility Information

Solubility	Ethanol: 40 mg/mL (184.91 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.6228 mL	23.1139 mL	46.2278 mL
5 mM	0.9246 mL	4.6228 mL	9.2456 mL
10 mM	0.4623 mL	2.3114 mL	4.6228 mL
50 mM	0.0925 mL	0.4623 mL	0.9246 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

Cao W, et al. Ar-turmerone inhibits the proliferation and mobility of glioma by downregulating cathepsin B. Aging (Albany NY). 2023;15(18):9377-9390.

Oh KN, et al. TLR4/NF-κB-Mediated Anti-Inflammatory and Cognitive Protective Actions of Curcuma longa and Ar-turmerone in Alzheimer's Disease Models. J Microbiol Biotechnol. 2025;35:e2506044. Published 2025 Sep 17.

Hucklenbroich J, Klein R, Neumaier B, et al. Aromatic-turmerone induces neural stem cell proliferation in vitro and in vivo. Stem Cell Res Ther. 2014;5(4):100. Published 2014 Sep 26.

Yonggang T, et al. Maturation and upregulation of functions of murine dendritic cells (DCs) under the influence of purified aromatic-turmerone (AR). Hum Vaccin Immunother. 2012 Oct;8(10):1416-24.

Hucklenbroich J, et al. Aromatic-turmerone induces neural stem cell proliferation in vitro and in vivo. Stem Cell Res Ther. 2014 Sep 26;5(4):100.

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