Safranal

Cat. No.: HY-N7560

CAS No.: 116-26-7

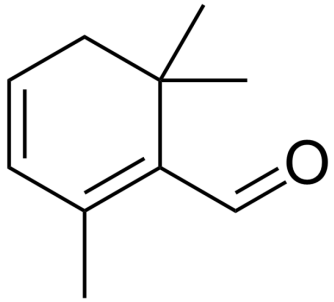
Molecular Formula: $C_{10}H_{14}O$

Molecular Weight: 150.22

Target: Others

Pathway: Others

Storage: -20°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (665.69 mM; Need ultrasonic)
Ethanol : 100 mg/mL (665.69 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	6.6569 mL	33.2845 mL	66.5690 mL
	5 mM	1.3314 mL	6.6569 mL	13.3138 mL
	10 mM	0.6657 mL	3.3285 mL	6.6569 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (16.64 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (16.64 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (16.64 mM); Clear solution
4. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (16.64 mM); Clear solution
5. Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (16.64 mM); Suspended solution; Need ultrasonic
6. Add each solvent one by one: 10% EtOH >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (16.64 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Safranal is an orally active main component of Saffron (Crocus sativus) and is responsible for the unique aroma of this spice.

Safranal has neuroprotective and anti-inflammatory effects and has the potential for Parkinson's disease research[1].

In Vitro

Safranal (10-50 μM; for 1 h) dose-dependently decreases LPS-induced iNOS and COX-2 levels in both RAW264.7 cells and BMDMs[1].

Safranal (10-50 μM; for 1 h) inhibits cytokine IL-6 and TNF-α production and mRNA expression in lipopolysaccharide (LPS)-stimulated RAW 264.7 cells[1].

Safranal (10, 50 μM; for 1 h followed by stimulation with 1 μg/ml of LPS for 30 min) inhibits the nuclear translocation of NF-κB and AP-1 in lipopolysaccharide (LPS)-stimulated RAW264.7 cells[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	RAW264.7 cells and bone marrow-derived macrophages (BMDMs)
Concentration:	10, 50 μM
Incubation Time:	For 1 h prior to lipopolysaccharide (LPS) stimulation (1 μg/ml)
Result:	Dose-dependently decreased LPS-induced iNOS and COX-2 levels in both RAW264.7 cells and BMDMs. Inhibited the phosphorylation of MAPK pathway proteins extracellular signal-regulated kinase (ERK), c-Jun N-terminal kinase (JNK), p38. Inhibited NF-κB pathway proteins IKKα/β and IκBα and the degradation of IκBα.

RT-PCR[1]

Cell Line:	RAW 264.7 cells
Concentration:	10, 50 μM
Incubation Time:	For 1 h followed by stimulation with LPS (1 μg/ml) for 24 h
Result:	Inhibited cytokine IL-6 and TNF-α production and mRNA expression in lipopolysaccharide (LPS)-stimulated RAW 264.7 cells.

In Vivo

Safranal (200-500 mg/kg; PO; for 7 days) causes a slight restoration of colon length and percentage of weight loss, and the DAI score is significantly low[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female BALB/c mice (18-20 g) (DSS-induced colitis mice)[1]
Dosage:	200, 500 mg/kg
Administration:	PO; for 7 days
Result:	Caused a slight restoration of colon length and percentage of weight loss, and the DAI score is significantly low.

REFERENCES

[1]. Peeraphong Lertnimitphun, et al. Safranal Alleviates Dextran Sulfate Sodium-Induced Colitis and Suppresses Macrophage-Mediated Inflammation. Front Pharmacol. 2019 Nov 1;10:1281.

Caution: Product has not been fully validated for medical applications. For research use only.

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