Anethole

Cat. No.: HY-B0900

CAS No.: 104-46-1

Molecular Formula: $C_{10}H_{12}O$

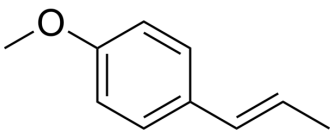
Molecular Weight: 148.2

Target: Apoptosis; Fungal; Bacterial; MMP; NF-κB

Pathway: Apoptosis; Anti-infection; Metabolic Enzyme/Protease; NF-κB

Storage:

Pure form	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 250 mg/mL (1686.91 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	6.7476 mL	33.7382 mL	67.4764 mL
5 mM	1.3495 mL	6.7476 mL	13.4953 mL
10 mM	0.6748 mL	3.3738 mL	6.7476 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 (16.87 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (16.87 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (16.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Anethole is a type of orally active aromatic compound that is widely found in nature and used as a flavoring agent. Anethole possesses anticancer, anti-inflammatory, antioxidant, antibacterial, antifungal, anesthetic, estrogenic, central nervous system depressant, hypnotic, insecticidal, and gastroprotective effects. Anethole can be used in the study of oxidative stress-related skin diseases and prostate cancer[1][2][3][4][5].

IC_{50} & Target

MMP-9

In Vitro

Anethole (0.5-1 μM; 1 h) can inhibit H2O2 (300 Mm; 24 h)-induced apoptosis and viability loss in human skin fibroblasts CRL1474[2].

Anethole has synergistic effects on the antifungal activities of phytochemicals including polygodial and 2E-undecenal against Saccharomyces cerevisiae and Candida albicans[3].

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

Cell Viability Assay[2]

Cell Line:	CRL1474 (human skin fibroblasts)
Concentration:	0.5 μM, 1 μM, 10 μM. After H_2O_2treatment (300 μM; 24 h)
Incubation Time:	1 h
Result:	Inhibited H2O2-induced cytotoxicity.

In Vivo

Anethole (62.5-500 mg/kg; Intraperitoneal injection, single dose) has an anti-inflammatory effect in BALB/C mice induced by LPS (1.5 mg/kg) (HY-D1056)[4].

Anethole (250-1000 mg/kg; P.O.; Once every other day for 60 consecutive days) has anti-tumor effects in Ehrlich ascites tumor Swiss albino mice[5].

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

Animal Model:	BALB/C mice model induced by LPS[4]
Dosage:	62.5 mg/kg, 125 mg/kg, 250 mg/kg, 500 mg/kg
Administration:	Intraperitoneal injection (i.p.), single dose. After LPS treatment (1.5 mg/kg; intratracheal injection, single dose).
Result:	Decreased total protein concentration. Decreased numbers of inflammatory cells including neutrophils and macrophages. Decreased the inflammatory mediators MMP-9, TNF-α, NO. Decreased LPS-induced histopathological changes. Suppressed the activation of NF-κB by blocking IκB-α degradation.

Animal Model:	Ehrlich ascites tumour (ETC) Swiss albino mouse model[5]
Dosage:	250 mg/kg; 500 mg/kg; 1000 mg/kg
Administration:	Oral gavage (p.o.); Once every other day for 60 consecutive days. After implantation of ETC cells (2.5×10^6 cells/mouse) into the right hind paw muscle of mice.
Result:	Reduced tumor weight and volume in mice. Prolonged the survival time of ETC mice.

CUSTOMER VALIDATION

- Int Immunopharmacol. 2021 Sep 13;100:108113.

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REFERENCES

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[5]. Al-Harbi M M, et al. Influence of anethole treatment on the tumour induced by Ehrlich ascites carcinoma cells in paw of Swiss albino mice[J]. European Journal of Cancer Prevention, 1995, 4(4): 307-318.

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