Sesamol

Cat. No.: HY-N1417

CAS No.: 533-31-3

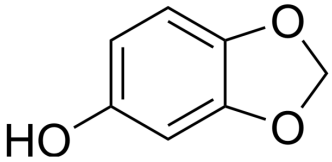
Molecular Formula: $C_7H_6O_3$

Molecular Weight: 138.12

Target: Apoptosis

Pathway: Apoptosis

Storage: 4°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 (724.01 mM)
Ethanol : ≥ 100 mg/mL (724.01 mM)
H_2O : ≥ 50 mg/mL (362.00 mM)
* "≥" means soluble, but saturation unknown.

	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	7.2401 mL	36.2004 mL	72.4008 mL
	5 mM	1.4480 mL	7.2401 mL	14.4802 mL
	10 mM	0.7240 mL	3.6200 mL	7.2401 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: ≥ 10 mg/mL (72.40 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 10 mg/mL (72.40 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 10 mg/mL (72.40 mM); Clear solution
4. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (18.10 mM); Clear solution
5. Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (18.10 mM); Clear solution
6. Add each solvent one by one: 10% EtOH >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (18.10 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Sesamol is a constituent of sesame oil. Sesamol shows a free radical scavenging activity. Sesamol shows an IC_{50} =5.95±0.56 μg/mL in the DPPH assay. Anti-oxidant activities[1]. Anticancer activities[2].
In Vitro	Sesamol has also been shown to be a classical inhibitor of lipid peroxidation[1]. Sesamol (0-1 mM) efficiently induces the apoptosis of human liver hepatocellular carcinoma (HepG2) cells[2]. Sesamol suppresses cell proliferation and induces intrinsic and extrinsic apoptosis in HepG2 cells[2]. Sesamol treatment elicites mitochondrial dysfunction by inducing a loss of mitochondrial membrane potential. Sesamol inhibits mitophagy and autophagy through impeding the PI3K Class III/Belin-1 pathway. Sesamol decreases the expression of anti-apoptotic protein Bcl-2, but shows no effect on the expression of apoptotic signal Bax. Sesamol improves the protein expression of Fas/FasL, and activates tBid and caspase-8 which are all involved in the extrinsic apoptosis pathway[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Sesamol treatment for 35 days does not significantly impact body weight, although the tumor volume is dramatically inhibited (40.56% size inhibitory rate with Sesamol at 200 mg/kg compared to the control group). However, a lower dose (100 mg/kg Sesamol) only has significant anti-tumor growth effect up to 27 days after the first treatment[2]. The Bcl-2/Bax ratio in tumor tissues is also decreased. Moreover, in the Sesamol treatment group, levels of the cell proliferation marker Ki76 are down-regulated, and levels of the cell apoptosis marker cleaved-caspase 3 are increased when compared to control. The expression of LC3 protein is remarkably decreased by Sesamol in a dose-dependent manner[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

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REFERENCES

[1]. Kapadia GJ, et al. Chemopreventive effect of resveratrol, sesamol, sesame oil and sunflower oil in the Epstein-Barrvirus early antigen activation assay and the mouse skin two-stage carcinogenesis. Pharmacol Res. 2002 Jun;45(6):499-505.

[2]. Liu Z, et al. Sesamol Induces Human Hepatocellular Carcinoma Cells Apoptosis by Impairing MitochondrialFunction and Suppressing Autophagy. Sci Rep. 2017 Apr 4;7:45728.

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