[8]-Shogaol

Cat. No.: HY-N2435

CAS No.: 36700-45-5

Molecular Formula: $C_{19}H_{28}O_3$

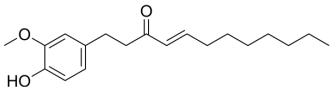
Molecular Weight: 304.42

Target: COX; Apoptosis

Pathway: Immunology/Inflammation; Apoptosis

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 : 100 mg/mL (328.49 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.2849 mL	16.4247 mL	32.8493 mL
	5 mM	0.6570 mL	3.2849 mL	6.5699 mL
	10 mM	0.3285 mL	1.6425 mL	3.2849 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: ≥ 6.25 mg/mL (20.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.21 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.21 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

[8]-Shogaol, a kind of stimulating compound in ginger, has antiplatelet (IC_{50}=5 μM), anti-cancer and anti-inflammatory activity. [8]-Shogaol inhibited COX-2 (IC_{50}=17.5 μM), which led to the decline of human leukemia cells. 8-Shogaol Selective direction TAK1 sum TAK1-TAB1 (IC_{50}=5 μM), suppress IKK, Akt sum MAPK signal pathway, and reverse synovitis synovial sum Air dampness (RA).

IC_{50} & Target

COX-2
17.5 μM (IC_{50})

In Vitro	[8]-Shogaol (10-50 μM; 24 h) exhibits cytotoxic effects on HL-60 cell growth in a concentration-dependent manner[3]. [8]-Shogaol (10 μM; 24 h) inhibits TNF-α, IL-1β, and IL-17-mediated inflammation and cell migration in RA patient-derived FLS (RA-FLS) and 3D synovial synoviocytes[4]. [8]-Shogaol inhibit the activity of TAK1 by binding to the ATP-binding pocket of TAK1[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	[8]-Shogaol (10 mg/kg, 30 mg/kg; ip; once daily for 10 days) reduces paw thickness and improves walking performance in a rat model of adjuvant-induced arthritis (AIA)[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Shieh PC, et al. Induction of apoptosis by [8]-shogaol via reactive oxygen species generation, glutathione depletion, and caspase activation in human leukemia cells. J Agric Food Chem. 2010 Mar 24;58(6):3847-54.

[2]. van Breemen RB, et al. Cyclooxygenase-2 inhibitors in ginger (Zingiber officinale). Fitoterapia. 2011 Jan;82(1):38-43.

[3]. Nurtjahja-Tjendraputra E, et al. Effective anti-platelet and COX-1 enzyme inhibitors from pungent constituents of ginger. Thromb Res. 2003;111(4-5):259-65.

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