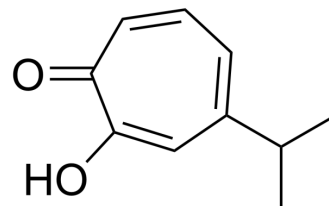


Hinokitiol

Cat. No.:	HY-B2230		
CAS No.:	499-44-5		
Molecular Formula:	C ₁₀ H ₁₂ O ₂		
Molecular Weight:	164.2		
Target:	Keap1-Nrf2; DNA Methyltransferase; Virus Protease		
Pathway:	NF-κB; Epigenetics; Anti-infection		
Storage:	Powder	-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 (609.01 mM; Need ultrasonic)
 H₂O : 0.67 mg/mL (4.08 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	6.0901 mL	30.4507 mL	60.9013 mL
	5 mM	1.2180 mL	6.0901 mL	12.1803 mL
	10 mM	0.6090 mL	3.0451 mL	6.0901 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (15.23 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (15.23 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (15.23 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Hinokitiol is a component of essential oils isolated from *Chymacyparis obtusa*, reduces Nrf2 expression, and decreases DNMT1 and UHRF1 mRNA and protein expression, with anti-infective, anti-oxidative, and anti-tumor activities.

IC₅₀ & Target

DNMT1

Nrf2

In Vitro

In U87MG and T98G glioma cell lines, hinokitiol demonstrates a dose-dependent decrease in viability, with IC₅₀ values of

316.5 ± 35.5 and 152.5 ± 25.3 μM, respectively. Hinokitiol represses ALDH activity and self-renewal ability in glioma stem cells, and inhibits in vitro oncogenicity. Hinokitiol also reduces Nrf2 expression in glioma stem cells in a dose-dependent manner^[1]. Hinokitiol (0-100 μM) inhibits colon cancer cell growth in a dose- and time-dependent manner. Hinokitiol (5, 10 μM) decreases DNMT1 and UHRF1 mRNA and protein expression, and increases TET1 expression via enhancement of 5hmC level in HCT-116 cells. Furthermore, hinokitiol reduces methylation status and restores mRNA expression of MGMT, CHST10, and BTG4 genes^[2].

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

PROTOCOL

Cell Assay ^[1]

U87MG and T98G glioma cells are cultured in Dulbecco's modified Eagle's medium with Ham's F12 medium (DMEM/F-12) containing 10% fetal bovine serum. Cell viability is determined using MTT to evaluate the cytotoxicity of hinokitiol. Cells are seeded in 24-well plates (1×10⁵ cells/well) in the presence of various concentration of hinokitiol or vehicle at 37°C for 24 h followed by incubation with MTT reagent. The blue formazan crystals of viable cells are dissolved in DMSO and then evaluated spectrophotometrically at 570 nm. DMSO-treated group is set as 100%, and data are presented as percentage of DMSO control. IC₅₀ values are calculated by the GraFit software.

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

CUSTOMER VALIDATION

- Oxid Med Cell Longev. 2021 Feb 10;2021:6670497.
- Int Immunopharmacol. 2021 Apr 5;96:107619.
- Cell Stress Chaperones. 2022 Nov 3.
- Research Square Print. 2022 Jul.

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REFERENCES

[1]. Ouyang WC, et al. Hinokitiol suppresses cancer stemness and oncogenicity in glioma stem cells by Nrf2 regulation. *Cancer Chemother Pharmacol*. 2017 Aug;80(2):411-419.

[2]. Seo JS, et al. Hinokitiol induces DNA demethylation via DNMT1 and UHRF1 inhibition in colon cancer cells. *BMC Cell Biol*. 2017 Feb 27;18(1):14.

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

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