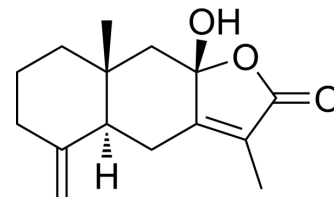


Atractylenolide III

Cat. No.:	HY-N0203		
CAS No.:	73030-71-4		
Molecular Formula:	C ₁₅ H ₂₀ O ₃		
Molecular Weight:	248.32		
Target:	Apoptosis		
Pathway:	Apoptosis		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (201.35 mM; Need ultrasonic)

Concentration	Solvent	Mass	1 mg	5 mg	10 mg
			Concentration	1 mg	5 mg
Preparing Stock Solutions	1 mM		4.0271 mL	20.1353 mL	40.2706 mL
	5 mM		0.8054 mL	4.0271 mL	8.0541 mL
	10 mM		0.4027 mL	2.0135 mL	4.0271 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 (10.07 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (10.07 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (10.07 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Atractylenolide III (ICodonolactone) is the main component of Atractylodes rhizome and has the activity of inducing apoptosis in lung cancer cells. Atractylenolide III is an orally active gastroprotective agent^{[1][2][3]}.

In Vitro

Atractylenolide III (1-100 μM, 48 h) induces cell apoptosis, and induces the activation of caspase-3 and caspase-9 and cleavage of PARP in A549 cells^[1].
Atractylenolide III (1-100 μM, 72 h) inhibits proliferation and angiogenesis (tube formation) in HUVECs^[1].
Atractylenolide III (1-100 μM) inhibits thymic stromal lymphopoietin (TSLP)-induced production of proinflammatory

cytokines (IL-6, IL-1b, TNF- α , and IL-8) in HMC-1 cells^[4].

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

Western Blot Analysis^[1]

Cell Line:	A549
Concentration:	1, 10, 100 μ M
Incubation Time:	24 h, 48 h
Result:	Increased active form of caspase-9, caspase-3, and the cleavage of PARP at 48 h. Increased the expression of proapoptotic protein bax, and induced AIF translocation to the nucleus at 24 h.

In Vivo

Atractylenolide III (5 and 10 mg/kg, p.o.) shows gastroprotective effects and reduces 70% ethanol-induced gastric ulcer in rats^[2].

Atractylenolide III (30 mg/kg, oral gavage for 14 days or 28 days) reduces depressive- and anxiogenic-like behaviors in rat depression models in Lipopolysaccharide (LPS) (HY-D1056) and chronic unpredictable mild stress (CUMS) induced rat depression model^[5].

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

Animal Model:	70% ethanol-induced gastric ulcers in rats ^[2]
Dosage:	5 and 10 mg/kg
Administration:	p.o.
Result:	Inhibited gastric ulcer formation and the necrotic erosion of gastric mucosa. Downregulated the MMP-2/9 expression by activating the TIMP-2 and TIMP-1 expressions.

CUSTOMER VALIDATION

- Acta Pharm Sin B. 2022 Sep;12(9):3618-3638.
- Pharmacol Res. 2020 May;155:104751.
- J Cell Mol Med. 2024 Feb;28(4):e18081.

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- [1]. Youu MS, et al. Ameliorative effect of atractylenolide III in the mast cell proliferation induced by TSLP. Food Chem Toxicol. 2017 Aug;106(Pt A):78-85.
- [2]. Zhou Y, et al. Atractylenolide III reduces depressive- and anxiogenic-like behaviors in rat depression models. Neurosci Lett. 2021 Aug 10;759:136050.
- [3]. Kang TH, et al. Atractylenolide III, a sesquiterpenoid, induces apoptosis in human lung carcinoma A549 cells via mitochondria-mediated death pathway. Food Chem Toxicol. 2011 Feb;49(2):514-9.
- [4]. Wang KT, et al. Gastroprotective activity of atractylenolide III from Atractylodes ovata on ethanol-induced gastric ulcer in vitro and in vivo. J Pharm Pharmacol. 2010 Mar;62(3):381-8.
- [5]. Kim HK, et al. Toxicity of atractylon and atractylenolide III Identified in Atractylodes ovata rhizome to Dermatophagoides farinae and Dermatophagoides pteronyssinus.

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

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