Dictamine

Cat. No.: HY-N0849

CAS No.: 484-29-7

Molecular Formula: $C_{12}H_9NO_2$

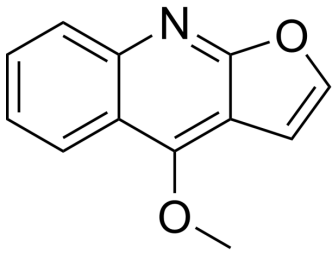
Molecular Weight: 199.21

Target: Apoptosis; Bacterial; Fungal

Pathway: Apoptosis; Anti-infection

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 (250.99 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	5.0198 mL	25.0991 mL	50.1983 mL
5 mM	1.0040 mL	5.0198 mL	10.0397 mL
10 mM	0.5020 mL	2.5099 mL	5.0198 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 (12.55 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.55 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.55 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dictamnine (Dictamine) exhibits cytotoxicity to human cervical and colon cancer cells and also has antibacterial and antifungal activities[1].

In Vitro

Dictamine shows antimicrobial activity against Saccharomyces cerevisiae (MIC: 64 μg/mL)[1].
Dictamine (2 μg/mL, 24 h) reduces ROS and mitochondrial ROS, and reduces IL-1β, TNF-α expression in HaCaT inflammation model[2].
Dictamine (0-100 μM, 12 h) inhibits cell proliferation, migration and invasion, and induces apoptosis in HCT116 cells, by

downregulating HIF-1α and Slug. I[3].

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

Western Blot Analysis[3]

Cell Line:	HCT116 cells
Concentration:	0-100 μM
Incubation Time:	12 h
Result:	Inhibited HIF-1α (synthesis but not degradation) and Slug protein accumulation under hypoxia.

In Vivo

Dictamine (2 μg/mL, 200 μL, applied once daily, for 14 days) reduces skin inflammation and skin swellingin Oxazolone (HY-126360)-induced atopic dermatitis mice model[2].

Dictamine (50 and 100 mg/kg, p.o., three times a week) inhibits tumor growth in a HCT116 xenograft tumor model[3].

Dictamine (1 and 5 mg/kg, 200 μL, applied to the skin) ameliorates chronic itch in 2,4-dinitrofluorobenzene-induced atopic dermatitis mice[4].

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

Animal Model:	HCT116 xenograft tumor model[3]
Dosage:	50 and 100 mg/kg
Administration:	p.o., three times a week
Result:	Inhibited tumor growth. Reduced HIF-1α and Slug protein level in the tumor tissue.

REFERENCES

[1]. Lin CY, et al. Dictamnine delivered by PLGA nanocarriers ameliorated inflammation in an oxazolone-induced dermatitis mouse model. J Control Release. 2021 Jan 10;329:731-742.

[2]. Wang JY, et al. Dictamnine promotes apoptosis and inhibits epithelial-mesenchymal transition, migration, invasion and proliferation by downregulating the HIF-1α and Slug signaling pathways. Chem Biol Interact. 2018 Dec 25;296:134-144.

[3]. Yang N, et al. Dictamnine ameliorates chronic itch in DNFB-induced atopic dermatitis mice via inhibiting MrgprA3. Biochem Pharmacol. 2023 Feb;208:115368.

[4]. Guo N, et al. Global gene expression profile of Saccharomyces cerevisiae induced by dictamnine. Yeast. 2008 Sep;25(9):631-41.

[5]. An FF, et al. Dihydroartemisinine enhances dictamnine-induced apoptosis via a caspase dependent pathway in human lung adenocarcinoma A549 cells. Asian Pac J Cancer Prev. 2013;14(10):5895-900.

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