Jaceosidin

Cat. No.: HY-N0831

CAS No.: 18085-97-7

Molecular Formula: $C_{17}H_{14}O_7$

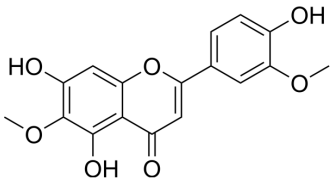
Molecular Weight: 330.29

Target: Bcl-2 Family; COX; Apoptosis

Pathway: Apoptosis; Immunology/Inflammation

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 : 125 mg/mL (378.46 mM; Need ultrasonic)
Ethanol : 7.14 mg/mL (21.62 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0276 mL	15.1382 mL	30.2764 mL
5 mM	0.6055 mL	3.0276 mL	6.0553 mL
10 mM	0.3028 mL	1.5138 mL	3.0276 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: ≥ 2.08 mg/mL (6.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.30 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Jaceosidin is a flavonoid isolated from Artemisia vestita, induces apoptosis in cancer cells, activates Bax and down-regulates Mcl-1 and c-FLIP expression[1]. Jaceosidin exhibits anti-cancer[2], anti-inflammatory activities, decreases leves of inflammatory markers, and suppresses COX-2 expression and NF-κB activation[3].

IC_{50} & Target		
	Bax	COX-2

In Vitro

Jaceosidin (30, 50, 75 μM) induces apoptosis in human renal carcinoma Caki cells after treatment for 24 h, shows no obvious effect on normal cells[1].
?Jaceosidin (75 μM) reduces MMP levels and causes cytochrome c release into the cytoplasm through Bax activation[1].
?Jaceosidin-mediated apoptosis is involved in downregulation of Mcl-1, c-FLIP expression, which is via inhibition of NF-κB and/or Sp1 transcriptional activity[1].
?Jaceosidin shows cytostatic activity to HES and HESC cells with IC_{50}s of 52.68 and 55.10 μM, and is less cytotocxic on Hec1 A and KLE (IC_{50}, 70.54, 147.14 μM, respectively), after treatment for 48 h[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	Hec1A, KLE, HES and HESC cells
Concentration:	3.125, 6.25, 12.5, 25, 50, and 100 μM
Incubation Time:	48 hour
Result:	Showed cytostatic activity to HES and HESC cells with IC_{50}s of 52.68 and 55.10 μM, less cytotocxic on Hec1 A and KLE (IC_{50}, 70.54, 147.14 μM).

In Vivo

Jaceosidin (10 and 20 mg/kg, p.o., once a day for 3 days) blocks carrageenan-induced increase in leukocyte number and protein levels in air pouch exudates in mice[3].
?Jaceosidin (10, 20 mg/kg, p.o.) suppresses COX-2 expression and NF-κB activation in mice[3].
?Jaceosidin (20 mg/kg, p.o. for 2 hours) reduces hind paw edema volume in rats[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	5-week-old male BALB/c mice (23-26 g)[3]
Dosage:	10 and 20 mg/kg
Administration:	P.O. once a day for 3 days
Result:	Decreased the volumes of exudates (inflammatory markers), cell number and protein levels. Inhibited TNF-α by 46.7% and 50.8%, IL-1β by 46.0% and 44.7%, and PGE2 by 21.7% and 16.9%, respectively, at 20 mg/kg. Blocked COX-2 expression and NF-κB activation.

Animal Model:	Male Sprague-Dawley rats (180-200 g)[3]
Dosage:	20 mg/kg
Administration:	P.O., for 2 hour
Result:	Reduced hind paw edema volume by 27.1% at 1 h, and 24.0% at 2 h, respectively.

CUSTOMER VALIDATION

- Acta Pharm Sin B. 2021 Jan;11(1):143-155.
- Cell Mol Neurobiol. 2021 Feb 23.
- Ultrastruct Pathol. 2023 May 29;1-10.

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REFERENCES

[1]. Woo SM, et al. Jaceosidin induces apoptosis through Bax activation and down-regulation of Mcl-1 and c-FLIP expression in human renal carcinoma Caki cells. Chem Biol Interact. 2016 Dec 25;260:168-175.

[2]. Lee JG, et al. Jaceosidin, isolated from dietary mugwort (Artemisia princeps), induces G2/M cell cycle arrest by inactivating cdc25C-cdc2 via ATM-Chk1/2 activation. Food Chem Toxicol. 2013 May;55:214-21.

[3]. Min SW, et al. Inhibitory effect of eupatilin and jaceosidin isolated from Artemisia princeps on carrageenan-induced inflammation in mice. J Ethnopharmacol. 2009 Sep 25;125(3):497-500.

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