Arctigenin

Cat. No.: HY-N0035

CAS No.: 7770-78-7

Molecular Formula: $C_{21}H_{24}O_6$

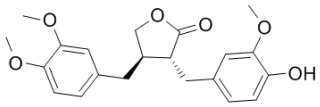
Molecular Weight: 372.41

Target: MMP; Influenza Virus; Autophagy

Pathway: Metabolic Enzyme/Protease; Anti-infection; Autophagy

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 125 mg/mL (335.65 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.6852 mL	13.4261 mL	26.8521 mL
5 mM	0.5370 mL	2.6852 mL	5.3704 mL
10 mM	0.2685 mL	1.3426 mL	2.6852 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 (16.78 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 6.25 mg/mL (16.78 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 6.25 mg/mL (16.78 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Arctigenin is a lignan found in certain plants of the Asteraceae; it has shown antiviral and anticancer effects in glass; it is the aglycone of arctiin.IC50 value: Target: anticancer agentArctiin and its aglucone, arctigenin from the fruits of Arctium lappa L. showed potent in vitro antiviral activities against influenza A virus (A/NWS/33, H1N1) (IFV). Based on the data from time-of-addition experiments and on release tests of progeny viruses, arctigenin was assumed to interfere with early event(s) of viral replication after viral penetration into cells, and to suppress the release of progeny viruses from the host cells [1]. arctigenin treatment reduced viability of bladder cancer T24 cells in a dose- and time-dependent manner after treatment with arctigenin (10, 20, 40, 80, and 100 μmol/L) for 24 hr and 48 hr. Arctigenin treatment clearly arrested tumor cells in the G1

phase of the cell cycle. At the molecular level, arctigenin treatment decreased cyclin D1 expression, whereas CDK4 and CDK6 expression levels were unaffected. Moreover, arctigenin selectively altered the phosphorylation of members of the MAPK superfamily, decreasing phosphorylation of ERK1/2 and activated phosphorylation of p38 significantly in a dose-dependent manner [2]. The use of arctigenin has been shown to be effective in a mouse model of Japanese encephalitis [3].

CUSTOMER VALIDATION

- Pharmacol Res. 2020 May;155:104751.
- Pharmacol Res. 2020 May;155:104721.
- Life Sci. 2020 Sep 1;256:117983.

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REFERENCES

[1]. Hayashi K, et al. Therapeutic effect of arctiin and arctigenin in immunocompetent and immunocompromised mice infected with influenza A virus. Biol Pharm Bull. 2010;33(7):1199-205.

[2]. Yang S, et al. Arctigenin anti-tumor activity in bladder cancer T24 cell line through induction of cell-cycle arrest and apoptosis. Anat Rec (Hoboken). 2012 Aug;295(8):1260-6.

[3]. Swarup V, et al. Novel strategy for treatment of Japanese encephalitis using arctigenin, a plant lignan. J Antimicrob Chemother. 2008 Mar;61(3):679-88.

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