Atractylenolide II

Cat. No.: HY-N0202

CAS No.: 73069-14-4

Molecular Formula: $C_{15}H_{20}O_2$

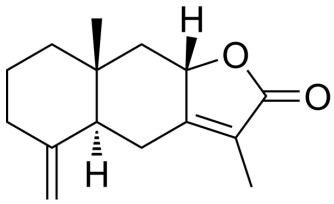
Molecular Weight: 232.32

Target: Apoptosis; ERK

Pathway: Apoptosis; MAPK/ERK Pathway; Stem Cell/Wnt

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 : 100 mg/mL (430.44 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	4.3044 mL	21.5220 mL	43.0441 mL
	5 mM	0.8609 mL	4.3044 mL	8.6088 mL
	10 mM	0.4304 mL	2.1522 mL	4.3044 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 (10.76 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.76 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.76 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Atractylenolide II is a sesquiterpene compound isolated from the dried rhizome of Atractylodes macrocephala (Baizhu in Chinese); anti-proliferative activity.IC50 value: 82.3 μM(B16 melanoma cell, 48 h) [1]Target: anticancer natural compoundin vitro: AT-II treatment for 48 h dose-dependently inhibited cell proliferation with an IC(50) of 82.3 μM, and induced G1 phase cell cycle arrest. Moreover, treatment with 75 μM AT-II induced apoptosis. These observations were associated with the decrease of the expression of Cdk2, phosphorylated-Akt, phosphorylated-ERK and Bcl-2, the increase of the expression of phosphorylated-p38, phosphorylated-p53, p21, p27, and activation of caspases-8, -9 and -3. In addition, a chemical inhibitor of p53, PFTα, significantly decreased AT-II-mediated growth inhibition and apoptosis [1]. In B16 and A375 cells, AT-II (20, 40

μm) treatment for 48 h dose-dependently reduced protein expression levels of phospho-STAT3, phospho-Src, as well as STAT3-regulated Mcl-1 and Bcl-xL. Overexpression of a constitutively active variant of STAT3, STAT3C in A375 cells diminished the antiproliferative and apoptotic effects of AT-II [2].in vivo: Daily administration of AT-II (12.5, 25 mg/kg, i.g.) for 14 days significantly inhibited tumor growth in a B16 xenograft mouse model and inhibited the activation/phosphorylation of STAT3 and Src in the xenografts [2].

CUSTOMER VALIDATION

- Pharmacol Res. 2020 May;155:104751.
- Biological Sciences. 2020 Sep.

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REFERENCES

[1]. Ye Y, et al. Atractylenolide II induces G1 cell-cycle arrest and apoptosis in B16 melanoma cells. J Ethnopharmacol. 2011 Jun 14;136(1):279-82.

[2]. Fu XQ, et al. Inhibition of STAT3 signalling contributes to the antimelanoma action of atractylenolide II. Exp Dermatol. 2014 Nov;23(11):855-7.

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