Neobavaisoflavone

Cat. No.: HY-N0720

CAS No.: 41060-15-5

Molecular Formula: $C_{20}H_{18}O_4$

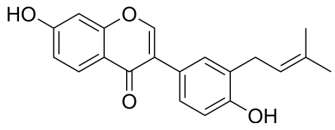
Molecular Weight: 322.35

Target: Apoptosis; DNA/RNA Synthesis

Pathway: Apoptosis; Cell Cycle/DNA Damage

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 : ≥ 31 mg/mL (96.17 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1022 mL	15.5111 mL	31.0222 mL
	5 mM	0.6204 mL	3.1022 mL	6.2044 mL
	10 mM	0.3102 mL	1.5511 mL	3.1022 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 (6.45 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.45 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.45 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Neobavaisoflavone, a flavonoid, is isolated from the seeds of Psoralea corylifolia. Neobavaisoflavone exhibits anti-inflammatory, anti-cancer and anti-oxidation activities. Neobavaisoflavone inhibits DNA polymerase at moderate to high concentrations. Neobavaisoflavone also inhibits platelet aggregation[1][2][3][4][5].

IC_{50} & Target

DNA polymerase[4]

In Vitro	Neobavaisoflavone (1-50 μM; 20 h) decreases NO (ED_{50}=25 μM) and cytokine (ED_{50}s=23.11, 5.03, 5.23, 5.26 and 18.80 μM for IL-1β, IL-6, IL-12p40, IL-12p70 and TNF-α, respectively) production in LPS plus IFN-γ-stimulated RAW264.7 macrophages[1]. Neobavaisoflavone (1-100 μM; 30 min) decreases the chemiluminescence in PMA-stimulated RAW264.7 macrophages, with an ED_{50} of 19.94 μM in activated RAW264.7 cells[1]. Neobavaisoflavone (1-100 μM); 20 h) has no effect on the viability and is not toxic to RAW264.7 cells[1]. Neobavaisoflavone (20-50 μM; 48 h) inhibits prostate cancer cell proliferation by inducing cytotoxicity and apoptosis in a dose-dependent manner[2]. Neobavaisoflavone (2-8 μM; 7 d) inhibits RANKL‐mediated osteoclastogenesis in bone marrow monocytes (BMMCs) and RAW264.7 cells dose dependently at the early stage[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Neobavaisoflavone (30 mg/kg; i.p. for 6 weeks) inhibits osteoclastogenesis, promotes osteogenesis and ameliorates bone loss in ovariectomized mice[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 female mice (8 weeksd; 20-25 g) were removed bilateral ovaries[3]
Dosage:	30 mg/kg
Administration:	I.p. for 6 weeks
Result:	Attenuated bone loss by inhibiting osteoclast activation and promoting osteogenesis in ovariectomized mice.

CUSTOMER VALIDATION

- Acta Pharm Sin B. 2021 Jan;11(1):143-155.
- Front Med. 2021 Apr 28.
- Phytomedicine. 2023 May 9, 154869.
- Biomed Pharmacother. 2020 Sep;129:110369.
- Int Immunopharmacol. October 2022, 109103.

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REFERENCES

[1]. Szliszka E, et, al. Inhibition of inflammatory mediators by neobavaisoflavone in activated RAW264.7 macrophages. Molecules. 2011 May 3;16(5):3701-12.

[2]. Szliszka E, et, al. Enhanced TRAIL-mediated apoptosis in prostate cancer cells by the bioactive compounds neobavaisoflavone and psoralidin isolated from Psoralea corylifolia. Pharmacol Rep. 2011;63(1):139-48.

[3]. Chen H, et, al. Neobavaisoflavone inhibits osteoclastogenesis through blocking RANKL signalling-mediated TRAF6 and c-Src recruitment and NF-κB, MAPK and Akt pathways. J Cell Mol Med. 2020 Aug;24(16):9067-9084.

[4]. Sun NJ, et, al. DNA polymerase and topoisomerase II inhibitors from Psoralea corylifolia. J Nat Prod. 1998 Mar;61(3):362-6.

[5]. Tsai WJ, et, al. Antiplatelet flavonoids from seeds of Psoralea corylifolia. J Nat Prod. 1996 Jul;59(7):671-2.

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

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