Broussochalcone A

Cat. No.: HY-142125

CAS No.: 99217-68-2

Molecular Formula: $C_{20}H_{20}O_5$

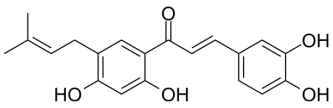
Molecular Weight: 340.37

Target: Reactive Oxygen Species; Apoptosis; Xanthine Oxidase

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (293.80 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9380 mL	14.6899 mL	29.3798 mL
	5 mM	0.5876 mL	2.9380 mL	5.8760 mL
	10 mM	0.2938 mL	1.4690 mL	2.9380 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 (7.34 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.34 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Broussochalcone A is an antioxidant and an inhibitor of Xanthine Oxidase (IC_{50}=2.21 μM), with free radical scavenging activity. Broussochalcone A inhibits iron-induced lipid peroxidation and nitric oxide synthesis in lipopolysaccharide (LPS) - activated macrophages. Broussochalcone A also induces Apoptosis of human renal carcinoma cells by increasing ROS levels and activating FOXO3 signaling pathways[1][2].

In Vitro

Broussochalcone A (0.3, 1, and 3 μM; 10 min, Fe induction for another 30 min) inhibits Fe^{2+} (200 μM)-induced lipid peroxidation in rat brain homogenate[1].

Broussochalcone A (1-30 μM; 30 min) increases DPPH (100 μM)-scavenging activity dose-dependently[1].

Broussochalcone A (0.1-1 μM) inhibits cytochrome c reduction with an IC50 value of 0.5 μM, mostly due to its superoxide anion-scavenging activity and only partially to its inhibition of xanthine oxidase activity[1].

Broussochalcone A (1-20 μM; 24 h) inhibits nitrite production and iNOS protein expression[1].

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

Western Blot Analysis[1]

Cell Line:	LPS-activated RAW 264.7 macrophages
Concentration:	1 μM, 3 μM, 10 μM, 20 μM
Incubation Time:	30 min; then stimulated by LPS (1 μg/mL) for another 24 hr
Result:	Caused inhibition of iNOS protein expression dose-dependently. Inhibited IkBα phosphorylation.

REFERENCES

[1]. Cheng Z, et al. Broussochalcone A, a potent antioxidant and effective suppressor of inducible nitric oxide synthase in lipopolysaccharide-activated macrophages. Biochem Pharmacol. 2001 Apr 15;61(8):939-46.

[2]. Lee HK, et al. Broussochalcone A Induces Apoptosis in Human Renal Cancer Cells via ROS Level Elevation and Activation of FOXO3 Signaling Pathway. Oxid Med Cell Longev. 2021 Oct 27;2021:2800706.

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