Albiflorin

Cat. No.: HY-N0037

CAS No.: 39011-90-0

Molecular Formula: $C_{23}H_{28}O_{11}$

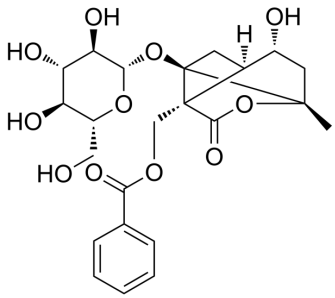
Molecular Weight: 480.46

Target: Reactive Oxygen Species

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

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 (208.13 mM)

H_2O : 100 mg/mL (208.13 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.0813 mL	10.4067 mL	20.8134 mL
5 mM	0.4163 mL	2.0813 mL	4.1627 mL
10 mM	0.2081 mL	1.0407 mL	2.0813 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (208.13 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.20 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.20 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.20 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Albiflorin, a major constituent contained in peony root, is a monoterpene glycoside with neuroprotective effects. Albiflorin also has anti-inflammatory, antioxidant and antinociceptive effects[1][2].

In Vitro

Albiflorin (50-200 μM; pretreated for 3 hours; PC12 cells) treatment significantly ameliorates glutamate (Glu)-induced reduction of cell viability[1].
Albiflorin (100 μM; pretreated for 3 hours; PC12 cells) treatment significantly ameliorates Glu-induced reduction of nuclear and mitochondrial apoptotic alteration, reactive oxygen species accumulation, and B-cell lymphoma 2 (Bcl-2)/Bax ratio[1].
Albiflorin (100 μM; pretreated for 3 hours; PC12 cells) treatment enhances phosphorylation of AKT and its downstream element GSK-3β[1].

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

Cell Viability Assay[1]

Cell Line:	PC12 cells
Concentration:	50 μM, 100 μM, 200 μM
Incubation Time:	Pretreated for 3 hours
Result:	Significantly ameliorated Glu-induced reduction of cell viability.

Apoptosis Analysis[1]

Cell Line:	PC12 cells
Concentration:	100 μM
Incubation Time:	Pretreated for 3 hours
Result:	Significantly ameliorated Glu-induced reduction of nuclear and mitochondrial apoptotic alteration.

Western Blot Analysis[1]

Cell Line:	PC12 cells
Concentration:	100 μM
Incubation Time:	Pretreated for 3 hours
Result:	Enhanced phosphorylation of AKT and its downstream element GSK-3β.

In Vivo

Albiflorin (50?mg/kg; intraperitoneal injection; once a day; for 15 days; Wistar rats) treatment significantly increases the paw withdrawal threshold (PWT) on the 11th and 15th day after surgery in rats. Albiflorin could inhibit the activation of p38 MAPK pathway in spinal microglia and subsequent upregulated IL-1β and TNF-α. Albiflorin displays remarkable effects on inhibiting the activation of astrocytes, suppressing the overelevated expression of phosphorylation of c-JNK (p-JNK) in astrocytes, and decreasing the content of chemokine CXCL1 in the spinal cord[2].

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

Animal Model:	Wistar rats (7-week-old; 200-220 g) bearing chronic constriction injury (CCI)[2]
Dosage:	50 mg/kg
Administration:	Intraperitoneal injection; once a day; for 15 days
Result:	Significantly increased the paw withdrawal threshold (PWT) on the 11th and 15th day after surgery.

CUSTOMER VALIDATION

- Drug Des Devel Ther. 2024 Jun 20:18:2405-2420.
- J Pharm Pharmacol. 2023 Jul 4;rgad064.
- Immun Inflamm Dis. 2023 Sep 20.

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REFERENCES

[1]. Wang D, et al. Neuroprotective effects of paeoniflorin, but not the isomer albiflorin, are associated with the suppression of intracellular calcium and calcium/calmodulin protein kinase II in PC12 cells. J Mol Neurosci. 2013 Oct;51(2):581-90.

[2]. Jianyu Zhou, et al. Paeoniflorin and Albiflorin Attenuate Neuropathic Pain via MAPK Pathway in Chronic Constriction Injury Rats. Evid Based Complement Alternat Med. 2016;2016:8082753.

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