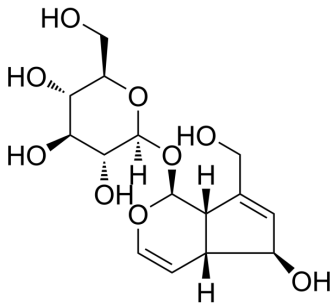
Aucubin

Cat. No.:	HY-N0664
CAS No.:	479-98-1
Molecular Formula:	$C_{15}H_{22}O_9$
Molecular Weight:	346.33
Target:	Bacterial
Pathway:	Anti-infection
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 100 mg/mL (288.74 mM)

DMSO : 100 mg/mL (288.74 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8874 mL	14.4371 mL	28.8742 mL
5 mM	0.5775 mL	2.8874 mL	5.7748 mL
10 mM	0.2887 mL	1.4437 mL	2.8874 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 (7.22 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.22 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.5 mg/mL (7.22 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Aucubin, an iridoid glucoside, is isolated from Plantago asiatica, Eucommia ulmoides, the leaves of Aucuba japonica and more recently from butterfly larva. Aucubin has many biological activities, such as antioxidant, anti-aging, anti-inflammatory, antimicrobial, anti-fibrotic, anti-cancer, hepatoprotective, neuroprotective and osteoprotective effects[1][2][3].

In Vitro

Aucubin (0.001-1 μg/mL; pretreated for 30 min) dose-dependently inhibits IgE-induced TNF-α and IL-6 production and expression in RBL-2H3 cells, with IC_{50}s of 0.101 and 0.19 μg/mL, respectively[2].
Aucubin (0.01 μg/mL; pretreated for 30 min) inhibits IgE-induced nuclear translocation of p65 subunit of NF-κB and degradation of IκBα in RBL-2H3 cells[2].
Aucubin (0.001-1 mM; 12 h) increases PC12 cellular viability and markedly inhbits H_2O_2-induced apoptotic cell death[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Aucubin (5 mg/kg; i.p. for 15 d) has antioxidant and pancreas-protective effects on rats with streptozotocin-induced diabetes [1].
Aucubin (40-200 mg/kg; a single i.p.) exhibits significant protective activity against α-amanitin intoxication in mice[5].
Aucubin (5 mg/kg/day; i.p. for 21 d) decreases the breathing frequency, increases the lung dynamic compliance, alleviates lung parenchymal fibrotic changes, and reduces the intrapulmonary collagen disposition and inflammatory injury of BLM-stimulated mice[6].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wistar rats (200-230 g) induced diabetes by a injection of streptozotocin[1]
Dosage:	5 mg/kg
Administration:	I.p. twice daily for the first 5 days, followed by single injections daily for the last 10 days
Result:	Increased the body weight of streptozotocin-diabetic rats. Lowered the blood glucose level. Decreased the level of lipid peroxidation and increased the activities of antioxidant enzymes. Increased in insulin immunoreactivity and the number of immunoreactive β cells compared with untreated diabetic rats.

CUSTOMER VALIDATION

- Stem Cell Res Ther. 2022 Aug 19;13(1):424.
- Int Immunopharmacol. 2024 Mar 10:129:111648.
- Int Immunopharmacol. 2023 Dec 2:126:111312.
- Pharmaceuticals. 2023 Nov 1, 16(11), 1545.
- Research Square Preprint. 2021 Feb.

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REFERENCES

[1]. Jin l, et, al. Antioxidant and pancreas-protective effect of aucubin on rats with streptozotocin-induced diabetes. Eur J Pharmacol. 2008 Mar 17;582(1-3):162-7.

[2]. Jeong HJ, et, al. Inhibition of TNF-alpha and IL-6 production by Aucubin through blockade of NF-kappaB activation RBL-2H3 mast cells. Cytokine. 2002 Jun 7;18(5):252-9.

[3]. Zeng X, et, al. A review of the pharmacology and toxicology of aucubin. Fitoterapia. 2020 Jan;140:104443.

[4]. Xue HY, et, al. Protective effects of aucubin on H_2O_2-induced apoptosis in PC12 cells. Phytother Res. 2012 Mar;26(3):369-74.

[5]. Chang LM, et, al. Aucubin: potential antidote for alpha-amanitin poisoning. J Toxicol Clin Toxicol. 1984 Jul;22(1):77-85.

[6]. Zhou Y, et, al. Aucubin Alleviates Bleomycin-Induced Pulmonary Fibrosis in a Mouse Model. Inflammation. 2017 Dec;40(6):2062-2073.

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