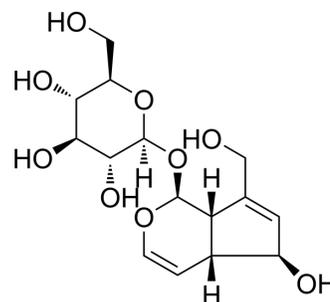


Aucubin

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

H₂O : ≥ 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

- 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
- 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
- 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	<p>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 IC₅₀s of 0.101 and 0.19 µg/mL, respectively^[2].</p> <p>?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].</p> <p>?Aucubin (0.001-1 mM; 12 h) increases PC12 cellular viability and markedly inhibits H₂O₂-induced apoptotic cell death^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
In Vivo	<p>Aucubin (5 mg/kg; i.p. for 15 d) has antioxidant and pancreas-protective effects on rats with streptozotocin-induced diabetes [1].</p> <p>?Aucubin (40-200 mg/kg; a single i.p.) exhibits significant protective activity against α-amanitin intoxication in mice^[5].</p> <p>?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].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>Male Wistar rats (200-230 g) induced diabetes by a injection of streptozotocin^[1]</td> </tr> <tr> <td>Dosage:</td> <td>5 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>I.p. twice daily for the first 5 days, followed by single injections daily for the last 10 days</td> </tr> <tr> <td>Result:</td> <td> <p>Increased the body weight of streptozotocin-diabetic rats.</p> <p>Lowered the blood glucose level.</p> <p>Decreased the level of lipid peroxidation and increased the activities of antioxidant enzymes.</p> <p>Increased in insulin immunoreactivity and the number of immunoreactive β cells compared with untreated diabetic rats.</p> </td> </tr> </table>	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:	<p>Increased the body weight of streptozotocin-diabetic rats.</p> <p>Lowered the blood glucose level.</p> <p>Decreased the level of lipid peroxidation and increased the activities of antioxidant enzymes.</p> <p>Increased in insulin immunoreactivity and the number of immunoreactive β cells compared with untreated diabetic rats.</p>
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CUSTOMER VALIDATION

- Stem Cell Res Ther. 2022 Aug 19;13(1):424.
- Biochem Pharmacol. 2023 Jan 28;115440.
- Int Immunopharmacol. 2024 Mar 10;129:111648.
- Int Immunopharmacol. 2023 Dec 2;126:111312.
- Pharmaceuticals. 2023 Nov 1, 16(11), 1545.

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- [1]. Jin I, 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 H₂O₂-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.

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