Aucubin

**Cat. No.:** HY-N0664  
**CAS No.:** 479-98-1  
**Molecular Formula:** $\text{C}_{15}\text{H}_{22}\text{O}_{9}$  
**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$_2$O:** $\geq$ 100 mg/mL (288.74 mM)  
- **DMSO:** 100 mg/mL (288.74 mM; Need ultrasonic)

*"≥" means soluble, but saturation unknown.*

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>5 mM</td>
</tr>
<tr>
<td></td>
<td>1 mM</td>
<td>2.8874 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.5775 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.2887 mL</td>
</tr>
</tbody>
</table>

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO $\gg$ 40% PEG300 $\gg$ 5% Tween-80 $\gg$ 45% saline  
   Solubility: $\geq$ 2.5 mg/mL (7.22 mM); Clear solution
2. Add each solvent one by one: 10% DMSO $\gg$ 90% (20% SBE-β-CD in saline)  
   Solubility: $\geq$ 2.5 mg/mL (7.22 mM); Clear solution
3. Add each solvent one by one: 10% DMSO $\gg$ 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 inhibits H_{2}O_{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.

<table>
<thead>
<tr>
<th>Animal Model:</th>
<th>Male Wistar rats (200-230 g) induced diabetes by a injection of streptozotocin [1]</th>
</tr>
</thead>
<tbody>
<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></td>
<td>Lowered the blood glucose level.</td>
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<td></td>
<td>Decreased the level of lipid peroxidation and increased the activities of antioxidant enzymes.</td>
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<td></td>
<td>Increased in insulin immunoreactivity and the number of immunoreactive β cells compared with untreated diabetic rats.</td>
</tr>
</tbody>
</table>

**References**


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