Genistin

**Cat. No.**: HY-N0595

**CAS No.**: 529-59-9

**Molecular Formula**: C₂₁H₂₀O₁₀

**Molecular Weight**: 432.38

**Target**: Autophagy

**Pathway**: Autophagy

**Storage**: Powder

-20°C 3 years

4°C 2 years

In solvent

-80°C 6 months

-20°C 1 month

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**SOLVENT & SOLUBILITY**

**In Vitro**

DMSO : ≥ 100 mg/mL (231.28 mM)

* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass 1 mg</th>
<th>Mass 5 mg</th>
<th>Mass 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>2.3128 mL</td>
<td>11.5639 mL</td>
<td>23.1278 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.4626 mL</td>
<td>2.3128 mL</td>
<td>4.6256 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.2313 mL</td>
<td>1.1564 mL</td>
<td>2.3128 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 >> 40% PEG300 >> 5% Tween-80 >> 45% saline

   Solubility: ≥ 2.5 mg/mL (5.78 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)

   Solubility: ≥ 2.5 mg/mL (5.78 mM); Clear solution

3. Add each solvent one by one: 10% DMSO >> 90% corn oil

   Solubility: ≥ 2.5 mg/mL (5.78 mM); Clear solution

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**BIOLOGICAL ACTIVITY**

**Description**

Genistin is the major isoflavonoid of soybeans and soy products.

**In Vitro**

Genistin is the major isoflavonoid of soybeans and soy products. Genistin shows a dose-dependent superoxide scavenging effect and exhibits major effect at 200 μM, corresponding in activity to 0.08 U/mg protein superoxide dismutase (SOD). Results demonstrate that Genistin exhibits a significantly (P<0.01) and a dose-dependent inhibitory
effect on the human cancer cell examined, and at higher concentration (100 μM), the cell viability is 59%. Genistin also induces a significant and dose-dependent increase in ROS formation when compare with the untreated control[1].

In Vivo

Myocardial infarct is markedly diminished by pretreatment with Genistin, particularly at the high dose. After 1 h of reperfusion, preconditioning with Genistin at dosages of 20 to 60 mg/kg significantly attenuates the release of lactate dehydrogenase (LDH), creatine kinase (CK) in a dose-dependent manner compare with the I/R group. Results show that the level of malondialdehyde (MDA) is decreased and the activities of superoxide dismutase (SOD) and catalase (CAT) are increased as well as an increased glutathione (GSH) level in a dose-dependent manner by Genistin treatment in I/R. Pretreatment with Genistin (20, 40 and 60 mg/kg) also prevents the expression of P2X7, p-IκBα, and p-NF-κB p65 compare with the model group[2].

PROTOCOL

Cell Assay [1]

M14 human melanoma cells are used and grown in RPMI containing 10% fetal calf serum, 100 U/mL penicillin, 100 μg/mL streptomycin, and 25 μg/mL fungizone. After 24 h of incubation at 37°C under a humidified 5% carbon dioxide to allow cell attachment, the cells are treated with different concentrations (12, 25, 50, and 100 μM) of Genistin and daidzin, and incubated for 72 h under the same conditions[1].

Animal Administration [2]

Sprague-Dawley rats (male, 250 to 300 g) are used to establish the I/R injury animal model and used in this experiment. Rats are randomly apportioned in equal animals (n=10) to five experimental groups: (1) sham group: rats are subjected to the entire surgical procedure but without the induction of I/R; (2) model group: I/R injury animal model is constructed by left anterior descending coronary artery (LAD) ligation for 30 min, and then the LAD is allowed 1 h reperfusion; and (3) three Genistin-treated groups: different doses (20, 40, and 60 mg/kg body weight, resp.) of Genistin dissolved in 0.5% sodium carboxymethyl cellulose (CMC-Na) solution are given intragastrically for 5 days before operation[2].

REFERENCES
