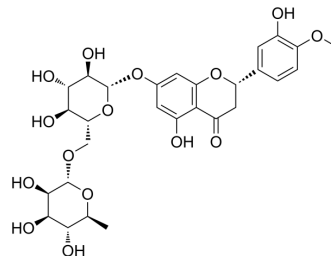


Hesperidin

| | | | | | | | | | | | | | |
|---------------------------|--|---------|-------|---------|--|-----|---------|------------|-------|---------|--|-------|--------|
| Cat. No.: | HY-15337 | | | | | | | | | | | | |
| CAS No.: | 520-26-3 | | | | | | | | | | | | |
| Molecular Formula: | C ₂₈ H ₃₄ O ₁₅ | | | | | | | | | | | | |
| Molecular Weight: | 610.56 | | | | | | | | | | | | |
| Target: | Autophagy; Reactive Oxygen Species; Endogenous Metabolite; Apoptosis | | | | | | | | | | | | |
| Pathway: | Autophagy; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Apoptosis | | | | | | | | | | | | |
| Storage: | <table border="0"> <tr> <td>Powder</td> <td>-20°C</td> <td>3 years</td> </tr> <tr> <td></td> <td>4°C</td> <td>2 years</td> </tr> <tr> <td>In solvent</td> <td>-80°C</td> <td>2 years</td> </tr> <tr> <td></td> <td>-20°C</td> <td>1 year</td> </tr> </table> | Powder | -20°C | 3 years | | 4°C | 2 years | In solvent | -80°C | 2 years | | -20°C | 1 year |
| 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 (163.78 mM; Need ultrasonic) | | | | |
| | | Solvent Concentration | Mass 1 mg | 5 mg | 10 mg |
| | Preparing Stock Solutions | 1 mM | 1.6378 mL | 8.1892 mL | 16.3784 mL |
| | | 5 mM | 0.3276 mL | 1.6378 mL | 3.2757 mL |
| | | 10 mM | 0.1638 mL | 0.8189 mL | 1.6378 mL |
| Please refer to the solubility information to select the appropriate solvent. | | | | | |
| In Vivo | <p>1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (4.09 mM); Clear solution</p> <p>2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (4.09 mM); Clear solution</p> | | | | |

BIOLOGICAL ACTIVITY

| | |
|--------------------|--|
| Description | Hesperidin (Hesperetin 7-rutinoside), a flavanone glycoside, is isolated from citrus fruits. Hesperidin has numerous biological properties, such as decreasing inflammatory mediators and exerting significant antioxidant effects. Hesperidin also exhibits antitumor and antiallergic activities ^{[1][2]} . |
| In Vitro | <p>Hesperidin (5-200 μM; 24-72 h) induces potent cytotoxic effects in human osteosarcoma MG-63 cells^[1].</p> <p>Hesperidin (5-150 μM; 48 h) induces early and late apoptosis in MG-63 cells^[1].</p> <p>Hesperidin (10-30 μM) inhibits the activity of COX-2 and iNOS in a dose dependent manner in RAW 264.7 cells activated with LPS^[2].</p> <p>Hesperidin (0.1 μg/mL; 2 h) decreases the formation of MDA and intracellular ROS, including chondrocyte apoptosis^[3].</p> |

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

Cell Viability Assay^[1]

| | |
|------------------|---|
| Cell Line: | MG-63 cells |
| Concentration: | 0, 5, 25, 50, 100, 150, 200 μ M |
| Incubation Time: | 24, 48, 72 hours |
| Result: | Led to time-dependent and concentration-dependent cytotoxic effects, with IC ₅₀ s of 94.3, 78.6 and 63.3 μ M at 24, 48 and 72 h, respectively. |

Apoptosis Analysis^[1]

| | |
|------------------|---|
| Cell Line: | MG-63 cells |
| Concentration: | 0, 5, 50, 150 μ M |
| Incubation Time: | 48 hours |
| Result: | Increased the percentage of apoptotic cells from 4.7% to 17.9, 34.6 and 68.3% at the concentration of 0, 5, 50 and 150 μ M, respectively. |

In Vivo

Hesperidin (5-80 mg/kg; 2 weeks) significantly suppresses MG-63 tumor growth in mice^[1].

Hesperidin (200 mg/kg; once daily for 28 d) markedly attenuates cartilage destruction and reduces IL-1 β and TNF- α levels in a surgically-induced osteoarthritis (OA) rats^[3].

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

CUSTOMER VALIDATION

- Acta Pharm Sin B. 2021 Jan;11(1):143-155.
- Cell Rep. 2017 Nov 21;21(8):2147-2159.
- Int J Mol Sci. 2022 Sep 7;23(18):10346.
- Chin Med. 2022 Feb 18;17(1):23.
- Drug Des Devel Ther. 2023 Oct 3;17:3047-3060.

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REFERENCES

[1]. Du GY, et, al. Hesperidin exhibits in vitro and in vivo antitumor effects in human osteosarcoma MG-63 cells and xenograft mice models via inhibition of cell migration and invasion, cell cycle arrest and induction of mitochondrial-mediated apoptosis. *Oncol Lett.* 2018 Nov;16(5):6299-6306.

[2]. Tejada S, et, al. Potential Anti-inflammatory Effects of Hesperidin from the Genus Citrus. *Curr Med Chem.* 2018;25(37):4929-4945.

[3]. Gao G, et, al. Effects of Hesperidin on H₂O₂-Treated Chondrocytes and Cartilage in a Rat Osteoarthritis Model. *Med Sci Monit.* 2018 Dec 17;24:9177-9186.

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