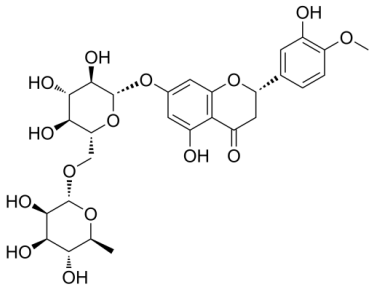
Data Sheet

Product Name:	Hesperidin
Cat. No.:	CS-5631
CAS No.:	520-26-3
Molecular Formula:	$C_{28}H_{34}O_{15}$
Molecular Weight:	610.56
Target:	Apoptosis; Autophagy; Endogenous Metabolite; Reactive Oxygen Species
Pathway:	Apoptosis; Autophagy; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Solubility:	DMSO : ≥ 33 mg/mL (54.05 mM)



BIOLOGICAL ACTIVITY:

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:*** Hesperidin (5-200 μM; 24-72 h) induces potent cytotoxic effects in human osteosarcoma MG-63 cells[1].

Hesperidin (5-150 μM; 48 h) induces early and late apoptosis in MG-63 cells[1].

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].

Hesperidin (0.1 μg/mL; 2 h) decreases the formation of MDA and intracellular ROS, including chondrocyte apoptosis[3]. ***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-1β and TNF-α levels in a surgically-induced osteoarthritis (OA) rats[3].

PROTOCOL (Extracted from published papers and Only for reference)

Cell assay [3] Cells were treated with hesperidin (0, 20, 40, 60, 80, and 100 μM) for 24, 48, or 72 h and relative cell viability was assessed using the 3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide (MTT) assay. Animal administration [1] In the control group, rats were treated with the corn oil and 1% CMC vehicle. In the CCl4 group, CCl4 was administered in a single injection on day 2. Rats in the HP group were treated with HP for 10 days, and those in the CCl4 + HP group were treated with CCl4 and HP together. Tissue samples were collected on day 10 after the first HP treatment. The animals were euthanized under ether anesthesia, and tissue samples were removed immediately, dissected on ice-cold glass, and stored at -86°C until analysis.

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 H_2O_2-Treated Chondrocytes and Cartilage in a Rat Osteoarthritis Model. Med Sci Monit. 2018 Dec 17;24:9177-9186.

CAIndexNames:

4H-1-Benzopyran-4-one, 7-[[6-O-(6-deoxy-α-L-mannopyranosyl)-β-D-glucopyranosyl]oxy]-2,3-dihydro-5-hydroxy-2-(3-hydroxy-4-methoxyphenyl)-, (2S)-

SMILES:

OC1=C(OC)C=CC([C@@H]2CC(C3=C(C=C(O[C@@H]4O[C@H](CO[C@@H]5O[C@@H](C)[C@H](O)[C@@H](O)[C@H]5O)[C@@H](O)[C@H](O)[C@H]4O)C=C3O)O2)=O)=C1

Caution: Product has not been fully validated for medical applications. For research use only.

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