

Product data sheet



MedKoo Cat#: 406967 Name: Acacetin CAS#: 480-44-4 Chemical Formula: C ₁₆ H ₁₂ O ₅ Exact Mass: 284.0685 Molecular Weight: 284.267	
Product supplied as: Powder	
Purity (by HPLC): ≥ 98%	
Shipping conditions: Ambient temperature	
Storage conditions: Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Acacetin is a Flavonoid with anti-peroxidative and anti-inflammatory properties. Acacetin is used in traditional Chinese medicine. It has been recognized as an antiproliferative agent on cancer cell lines by inducing apoptosis and blocking cell cycle progression in the G1 phase. Acacetin inhibits expression of matrix metalloproteinases via a MAPK-dependent mechanism in fibroblast-like synoviocytes.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	26.0	91.46
DMSO:PBS (pH 7.2) (1:2)	0.33	1.16
DMF	15.0	52.77

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.52 mL	17.59 mL	35.18 mL
5 mM	0.70 mL	3.52 mL	7.04 mL
10 mM	0.35 mL	1.76 mL	3.52 mL
50 mM	0.07 mL	0.35 mL	0.70 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Han WM, Chen XC, Li GR, Wang Y. Acacetin Protects Against High Glucose-Induced Endothelial Cells Injury by Preserving Mitochondrial Function via Activating Sirt1/Sirt3/AMPK Signals. *Front Pharmacol.* 2020 Dec 18;11:607796. doi: 10.3389/fphar.2020.607796. PMID: 33519472; PMCID: PMC7844858.

2. Wang S, Lin B, Liu W, Wei G, Li Z, Yu N, Xue X, Ji G. Acacetin Induces Apoptosis in Human Osteosarcoma Cells by Modulation of ROS/JNK Activation. *Drug Des Devel Ther.* 2020 Nov 18;14:5077-5085. doi: 10.2147/DDDT.S275148. PMID: 33239866; PMCID: PMC7680676.

In vivo study

1. Hong YX, Wu WY, Song F, Wu C, Li GR, Wang Y. Cardiac senescence is alleviated by the natural flavone acacetin via enhancing mitophagy. *Aging (Albany NY).* 2021 Jun 27;13(12):16381-16403. doi: 10.18632/aging.203163. Epub 2021 Jun 27. PMID: 34175838; PMCID: PMC8266317.

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2. Wei Y, Jing J, Peng Z, Liu X, Wang X. Acacetin ameliorates insulin resistance in obesity mice through regulating Treg/Th17 balance via MiR-23b-3p/NEU1 Axis. *BMC Endocr Disord.* 2021 Mar 29;21(1):57. doi: 10.1186/s12902-021-00688-8. PMID: 33781239; PMCID: PMC8008644.

7. Bioactivity

Biological target:

Acacetin docks in the ATP binding pocket of PI3K γ .

In vitro activity

Flow cytometry analysis revealed that the viability reduction by high-glucose was related to increase in apoptosis (Figure 1C). Acacetin significantly reversed the increase in apoptosis (Figures 1C,D). Results of western blot analysis showed that pro-apoptotic protein Bax was increased, while anti-apoptotic protein Bcl-2 was decreased in HUVECs cultured with 33 mM glucose medium. Acacetin treatment reversed the Bax increase, enhanced the reduced Bcl-2, and increased the reduced Bcl-2/Bax ratio in a concentration dependent manner (Figures 1E–G). These results suggest that acacetin protects HUVECs against high glucose injury by inhibiting apoptosis.

Reference: *Front Pharmacol.* 2020; 11: 607796. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7844858/>

In vivo activity

Serum advanced glycation end products (AGEs) was increased in D-galactose-induced accelerated aging mice to 0.91 ± 0.17 $\mu\text{g/mL}$ from 0.52 ± 0.13 $\mu\text{g/mL}$ in control ($n = 8$, $P < 0.05$), which was decreased to 0.68 ± 0.12 $\mu\text{g/mL}$, 0.61 ± 0.11 $\mu\text{g/mL}$, and 0.51 ± 0.18 $\mu\text{g/mL}$ in mice treated with 10, 20 or 50 mg/kg/day of acacetin, respectively ($n = 7$. $P < 0.05$ vs. D-galactose alone). These results suggest that acacetin may prevent D-galactose-induced hair loss and reduce the formation of AGEs.

Reference: *Aging (Albany NY).* 2021 Jun 30; 13(12): 16381–16403. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8266317/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.