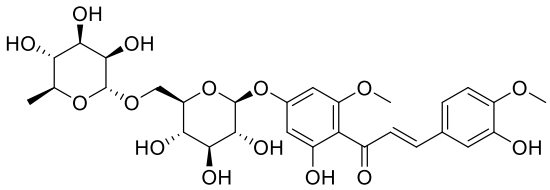
Product data sheet

MedKoo Cat#: 330206 Name: Hesperidin Methyl Chalcone CAS: 24292-52-2 Chemical Formula: $C_{29}H_{36}O_{15}$ Exact Mass: 624.2054 Molecular Weight: 624.592	
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:
Hesperidin Methyl Chalcone is a derivative of the flavonoid hesperidin and is found in citrus fruits like oranges and grapefruit and is often used to reduce dark circles under the eyes.

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	50.0	80.05

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.60 mL	8.01 mL	16.01 mL
5 mM	0.32 mL	1.60 mL	3.20 mL
10 mM	0.16 mL	0.80 mL	1.60 mL
50 mM	0.03 mL	0.16 mL	0.32 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. Monjotin N, Tenca G. Lymphotonic activity of Ruscus extract, hesperidin methyl chalcone and vitamin C in human lymphatic smooth muscle cells. Microvasc Res. 2022 Jan;139:104274. doi: 10.1016/j.mvr.2021.104274. Epub 2021 Oct 27. PMID: 34717967.
2. Mansini AP, Peixoto E, Jin S, Richard S, Gradilone SA. The Chemosensory Function of Primary Cilia Regulates Cholangiocyte Migration, Invasion, and Tumor Growth. Hepatology. 2019 Apr;69(4):1582-1598. doi: 10.1002/hep.30308. Epub 2019 Mar 15. PMID: 30299561; PMCID: PMC6438749.

In vivo study

1. Bussmann AJC, Zaninelli TH, Saraiva-Santos T, Fattori V, Guazelli CFS, Bertozzi MM, Andrade KC, Ferraz CR, Camilios-Neto D, Casella AMB, Casagrande R, Borghi SM, Verri WA Jr. The Flavonoid Hesperidin Methyl Chalcone Targets Cytokines and Oxidative Stress to Reduce Diclofenac-Induced Acute Renal Injury: Contribution of the Nrf2 Redox-Sensitive Pathway. Antioxidants (Basel). 2022 Jun 27;11(7):1261. doi: 10.3390/antiox11071261. PMID: 35883752; PMCID: PMC9312103.
2. Guazelli CFS, Fattori V, Ferraz CR, Borghi SM, Casagrande R, Baracat MM, Verri WA Jr. Antioxidant and anti-inflammatory effects of hesperidin methyl chalcone in experimental ulcerative colitis. Chem Biol Interact. 2021 Jan 5;333:109315. doi: 10.1016/j.cbi.2020.109315. Epub 2020 Nov 7. PMID: 33171134.

7. Bioactivity
Biological target:

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Hesperidin methylchalcone (Hesperidin methyl chalcone) inhibits oxidative stress, cytokine production and NF-κB activation.

In vitro activity

Ruscus/HMC (hesperidin methyl chalcone)/Vit C prepared in assay buffer and tested at concentrations of 0.1, 0.3, 1.0 and 3.0 mg/mL in triplicate in three independent experiments (n = 9) induced robust concentration-dependent calcium mobilization in LSMCs (lymphatic smooth muscle cells). When tested at concentrations of 1.0 and 3.0 mg/mL, *Ruscus*/HMC/Vit C induced a statistically significant LSMC contraction compared to control conditions (1118 ± 162, $P < 0.01$; 1685 ± 225, $P < 0.001$, respectively) with the same amplitude as that seen in response to 1 μM angiotensin II (1461 ± 338) for the two highest concentrations (Fig. 3).

Reference: Microvasc Res. 2022 Jan;139:104274. https://pubmed.ncbi.nlm.nih.gov/34717967/

In vivo activity

HMC (hesperidin methyl chalcone) treatment inhibited the elevation of renal dysfunction markers induced by SDCF in a dose-dependent manner. HMC treatment restored the impaired plasmatic antioxidant status induced by SDFC, seen as increased FRAP and ABTS levels compared to the vehicle control, and inhibited lipid peroxidation levels, seen as a reduced concentration of TBARS. These results indicate HMC protects renal tissue from the toxic effects of SDFC. Further, HMC reduces systemic oxidative parameters in AKI mice, which reflects its potential antioxidant actions in response to increased free radical activity.

Reference: Antioxidants (Basel). 2022 Jun 27;11(7):1261. https://pubmed.ncbi.nlm.nih.gov/35883752/