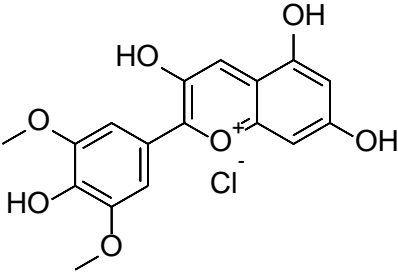


Product data sheet



MedKoo Cat#: 576849 Name: Malvidin chloride CAS: 643-84-5 Chemical Formula: C ₁₇ H ₁₅ ClO ₇ Exact Mass: 366.0506 Molecular Weight: 366.75	
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:

Malvidin chloride is an anti-inflammatory and antioxidant that has been shown to prevent inflammatory reactions caused by lipopolysaccharide (LPS) in peripheral blood mononuclear cells (PBMCs).

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
DMF	25.0	68.17
DMF:PBS (pH 7.2) (1:9)	0.1	0.27
DMSO	16.0	43.63
Ethanol	16.0	43.63

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.73 mL	13.63 mL	27.27 mL
5 mM	0.55 mL	2.73 mL	5.45 mL
10 mM	0.27 mL	1.36 mL	2.73 mL
50 mM	0.06 mL	0.27 mL	0.55 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

- Liang S, Li X, Liu R, Hu J, Li Y, Sun J, Bai W. Malvidin-3-O-Glucoside Ameliorates Cadmium-Mediated Cell Dysfunction in the Estradiol Generation of Human Granulosa Cells. *Nutrients*. 2023 Feb 2;15(3):753. doi: 10.3390/nu15030753. PMID: 36771459; PMCID: PMC9921828.
- Silva S, Costa EM, Machado M, Morais R, Calhau C, Pintado M. Antiadhesive and Antibiofilm Effect of Malvidin-3-Glucoside and Malvidin-3-Glucoside/Neochlorogenic Acid Mixtures upon Staphylococcus. *Metabolites*. 2022 Nov 3;12(11):1062. doi: 10.3390/metabo12111062. PMID: 36355145; PMCID: PMC9694786.

In vivo study

- Zhao P, Li X, Yang Q, Lu Y, Wang G, Yang H, Dong J, Zhang H. Malvidin alleviates mitochondrial dysfunction and ROS accumulation through activating AMPK- α /UCP2 axis, thereby resisting inflammation and apoptosis in SAE mice. *Front Pharmacol*. 2023 Jan 9;13:1038802. doi: 10.3389/fphar.2022.1038802. PMID: 36699054; PMCID: PMC9868257.

Product data sheet



2. Liu F, Smith AD, Wang TTY, Pham Q, Cheung L, Yang H, Li RW. Biological pathways via which the anthocyanin malvidin alleviated the murine colitis induced by *Citrobacter rodentium*. *Food Funct.* 2023 Jan 23;14(2):1048-1061. doi: 10.1039/d2fo02873e. PMID: 36562464.

7. Bioactivity

Biological target:

Malvidin shows cytotoxicity through the arrest of the G2/M phase of cell cycle and induction of apoptosis.

In vitro activity

In the present study, the protective effects and underlying mechanisms of malvidin-3-O-glucoside (M3G) against the toxicity of Cd on female reproduction in KGN cells (human ovarian granulosa-like tumor cells) were investigated. After treating cells with 10 $\mu\text{mol/L}$ cadmium chloride, the results showed that M3G lessened Cd-induced KGN cell cytotoxicity better than malvidin and malvidin-3,5-O-diglucoside. Additionally, M3G significantly decreased the Cd-induced generation of reactive oxygen species, inhibited the Cd-induced arrest of the G2/M phase of the cell cycle, and increased estradiol (E2) production.

Reference: *Nutrients.* 2023 Feb 2;15(3):753. <https://pubmed.ncbi.nlm.nih.gov/36771459/>

In vivo activity

Moreover, dorsomorphin block assays verified that malvidin upregulated UCP2 expression through phosphorylating AMPK in SAE mouse models. Also, malvidin alleviated SAE progression through inhibition of ROS-dependent NLRP3 inflammasome activation mediated serum pro-inflammatory cytokines secretion and mitochondrial pathway mediated apoptosis with weakened apoptosis body formation and tunel positive signals, and decreased Bax, cytochrome C, caspase-3 and increased Bcl-2 protein levels.

Reference: *Front Pharmacol.* 2023 Jan 9;13:1038802. <https://pubmed.ncbi.nlm.nih.gov/36699054/>

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.