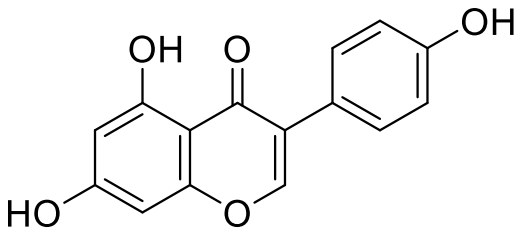
Product data sheet

MedKoo Cat#: 529319 Name: Genisterin CAS: 446-72-0 Chemical Formula: $C_{15}H_{10}O_5$ Exact Mass: 270.0528 Molecular Weight: 270.24	
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:
Genisterin, also known as Genistein, is a EGFR/DNA topoisomerase II inhibitor potentially for the treatment of bladder cancer and prostate cancer.

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	30.0	111.01
DMSO	61.33	226.96
DMSO:PBS (pH 7.2) (1:6)	1.0	3.70
Ethanol	4.0	14.80

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.70 mL	18.50 mL	37.00 mL
5 mM	0.74 mL	3.70 mL	7.40 mL
10 mM	0.37 mL	1.85 mL	3.70 mL
50 mM	0.07 mL	0.37 mL	0.74 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. Ullah TR, Balka KR, Ambrose RL, Pépin G, Wilce MCJ, Wilce JA, Thomas BJ, De Nardo D, Williams BRG, Gantier MP. Genistein Targets STING-Driven Antiviral Responses. mBio. 2022 Aug 30;13(4):e0206422. doi: 10.1128/mbio.02064-22. Epub 2022 Aug 4. PMID: 35924852; PMCID: PMC9426420.
2. Cong L, Xie X, Liu S, Xiang L, Fu X. Genistein promotes M1 macrophage apoptosis and reduces inflammatory response by disrupting miR-21/TIPE2 pathway. Saudi Pharm J. 2022 Jul;30(7):934-945. doi: 10.1016/j.jsps.2022.05.009. Epub 2022 May 23. PMID: 35903524; PMCID: PMC9315303.

In vivo study

1. Li Y, Ou S, Liu Q, Gan L, Zhang L, Wang Y, Qin J, Liu J, Wu W. Genistein improves mitochondrial function and inflammatory in rats with diabetic nephropathy via inhibiting MAPK/NF-κB pathway. Acta Cir Bras. 2022 Aug 15;37(6):e370601. doi: 10.1590/acb370601. PMID: 35976278; PMCID: PMC9377651.

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2. Siriviriyakul P, Sriko J, Somanawat K, Chayanupatkul M, Klaikeaw N, Werawatganon D. Genistein attenuated oxidative stress, inflammation, and apoptosis in L-arginine induced acute pancreatitis in mice. BMC Complement Med Ther. 2022 Aug 4;22(1):208. doi: 10.1186/s12906-022-03689-9. PMID: 35927726; PMCID: PMC9351145.

7. Bioactivity

Biological target:

Genistein, a soy isoflavone, is a multiple tyrosine kinases (e.g., EGFR) inhibitor which acts as a chemotherapeutic agent against different types of cancer, mainly by altering apoptosis, the cell cycle, and angiogenesis and inhibiting metastasis.

In vitro activity

Although not exhibiting any visible toxicity on the HEK-cGAS^{low} cells at the doses used, Genistein treatment reduced cell proliferation above 30 μM (Fig. S1A). To circumvent this, this study normalized the number of cGAMP-producing cells after Genistein treatment and confirmed a dose-dependent inhibition of cGAMP transactivation of cocultured LL171 cells by Genistein (Fig. 1C). Similarly, pretreatment of connexin (CX) expressing human MG-63 cells with Genistein, that were subsequently transfected with an immunostimulatory DNA (ISD) to activate cGAS, significantly decreased ISRE-luciferase expression from cocultured LL171 cells (Fig. 1D). It is noteworthy that intracellular levels of cGAMP were increased by Genistein in HEK cGAS^{low} cells (Fig. 1E), indicating an inhibition of GJIC aligned with the accumulating cGAMP levels observed.

Reference: mBio. 2022 Aug 30;13(4):e0206422. https://pubmed.ncbi.nlm.nih.gov/35924852/

In vivo activity

The mfn2 expression and mitochondrial membrane potential in DN group were significantly higher than those in control group, which were also increased in each treatment group with genistein in a dose-dependent manner (Figs. 3a and 3b). It shows that genistein supplementation improves nephropathy likely via modulation of the mitochondrial fusion and function in DN rats.

Reference: Acta Cir Bras. 2022 Aug 15;37(6):e370601. https://pubmed.ncbi.nlm.nih.gov/35976278/

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.