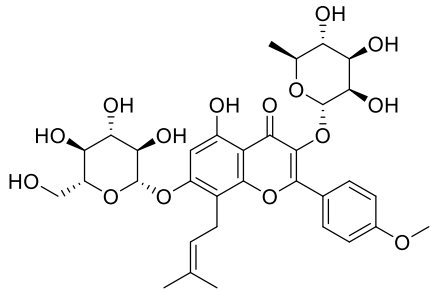# Product data sheet

MedKoo Cat#: 540217
Name: Icariin
CAS: 489-32-7
Chemical Formula: $C_{33}H_{40}O_{15}$
Exact Mass: 676.2367
Molecular Weight: 676.668

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:

Icariin is a PDE5 inhibitor found in Epimedium. It displays many activities, including inhibiting AAPH-induced oxidative DNA damage, decreasing immobility time in the forced swim test, and suppressing osteoclast growth and differentiation.

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	20.0	29.56
DMSO	65.0	96.06
DMSO:PBS (pH 7.2) (1:10)	0.1	0.15

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.48 mL	7.39 mL	14.78 mL
5 mM	0.30 mL	1.48 mL	2.96 mL
10 mM	0.15 mL	0.74 mL	1.48 mL
50 mM	0.03 mL	0.15 mL	0.30 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. Chen Y, Pan X, Zhao J, Li C, Lin Y, Wang Y, Liu X, Tian M. Icariin alleviates osteoarthritis through PI3K/Akt/mTOR/ULK1 signaling pathway. Eur J Med Res. 2022 Oct 17;27(1):204. doi: 10.1186/s40001-022-00820-x. PMID: 36253872; PMCID: PMC9575285.
2. Yin Y, Xu W, Song Y, Zhou Z, Sun X, Zhang F. Icariin Regulates the hsa_circ_0003159/eIF4A3/bcl-2 Axis to Promote Gastric Cancer Cell Apoptosis. Evid Based Complement Alternat Med. 2022 Jul 15;2022:1955101. doi: 10.1155/2022/1955101. PMID: 35873631; PMCID: PMC9307325.

In vivo study

1. Shao Y, Sun L, Yang G, Wang W, Liu X, Du T, Chen F, Jing X, Cui X. Icariin protects vertebral endplate chondrocytes against apoptosis and degeneration via activating Nrf-2/HO-1 pathway. Front Pharmacol. 2022 Sep 13;13:937502. doi: 10.3389/fphar.2022.937502. PMID: 36176424; PMCID: PMC9513224.
2. Shaukat A, Shaukat I, Rajput SA, Shukat R, Hanif S, Huang S, Aleem MT, Li K, Li Q, Chen C, Zhang X, Lv H, Yao Z, Yang L. Icariin Alleviates Escherichia coli Lipopolysaccharide-Mediated Endometritis in Mice by Inhibiting Inflammation and Oxidative Stress. Int J Mol Sci. 2022 Sep 6;23(18):10219. doi: 10.3390/ijms231810219. PMID: 36142129; PMCID: PMC9499631.

Product data sheet

7. Bioactivity

Biological target:

Icariin inhibits PDE5 and PDE4 activities with IC_{50}s of 432 nM and 73.50 μM, respectively. Icariin also is a PPARα activator.

In vitro activity

Cell viability following IL-1β treatment was markedly decreased compared to the control. However, ICA (icariin) pretreatment increased cell viability. These results demonstrate that pretreatment with ICA can significantly rescue IL-1β-mediated growth inhibition in SW1353 cells.

Reference: Eur J Med Res. 2022 Oct 17;27(1):204. https://pubmed.ncbi.nlm.nih.gov/36253872/

In vivo activity

Also the height of intervertebral disc decreased in the IVDD (intervertebral disc degeneration) group, and this could be reversed by ICA (icariin) administration. These results indicated that ICA could alleviate IVDD progression and CEP (cartilage endplates) degeneration.

Reference: Front Pharmacol. 2022 Sep 13;13:937502. https://pubmed.ncbi.nlm.nih.gov/36176424/

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.