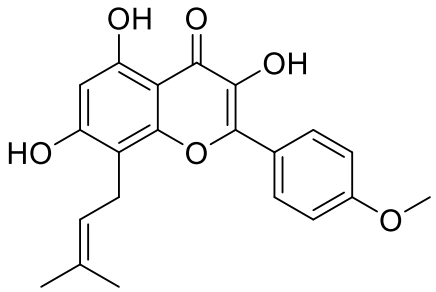
Product data sheet

MedKoo Cat#: 206581 Name: Icaritin CAS: 118525-40-9 Chemical Formula: $C_{21}H_{20}O_6$ Exact Mass: 368.126 Molecular Weight: 368.385	
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:
Icaritin is an oral traditional Chinese medicine, derived from barrenwort, which targets the estrogen receptor α36. IC50 values for Icaritin are 8,13 and 18 μM for K562, CML-CP and CML-BC cells respectively. Icaritin inhibits the invasion and epithelial-to-mesenchymal transition of glioblastoma cells by targeting EMMPRIN via PTEN/AKt/HIF-1α signalling. Icaritin suppresses hepatocellular carcinoma initiation and malignant growth through the IL-6/Jak2/Stat3 pathway. Icaritin activates JNK-dependent mPTP necrosis pathway in colorectal cancer cells.

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	3.0	8.14
DMSO	10.31	27.99
DMSO:PBS (pH 7.2) (1:5)	0.16	0.43
Ethanol	0.3	0.81
Water	1.2	3.26

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.71 mL	13.57 mL	27.15 mL
5 mM	0.54 mL	2.71 mL	5.43 mL
10 mM	0.27 mL	1.36 mL	2.71 mL
50 mM	0.05 mL	0.27 mL	0.54 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. Zhang C, Wang X, Zhang C. Icaritin inhibits CDK2 expression and activity to interfere with tumor progression. iScience. 2022 Aug 22;25(9):104991. doi: 10.1016/j.isci.2022.104991. PMID: 36093042; PMCID: PMC9460166.
2. Gao L, Ouyang Y, Li R, Zhang X, Gao X, Lin S, Wang X. Icaritin Inhibits Migration and Invasion of Human Ovarian Cancer Cells via the Akt/mTOR Signaling Pathway. Front Oncol. 2022 Apr 1;12:843489. doi: 10.3389/fonc.2022.843489. PMID: 35433438; PMCID: PMC9010825.

In vivo study

Product data sheet

1. Wu CT, Yang TH, Chen MC, Guan SS, Chen CM, Liu SH. Therapeutic Effect of Icaritin on Cerebral Ischemia-Reperfusion-Induced Senescence and Apoptosis in an Acute Ischemic Stroke Mouse Model. Molecules. 2022 Sep 7;27(18):5783. doi: 10.3390/molecules27185783. PMID: 36144517; PMCID: PMC9500895.
2. Zhang C, Xu H, Sui X, Chen L, Chen B, Lv H, Wang S, Wang X. Icaritin inhibits PLK1 to activate DNA damage response in NK/T cell lymphoma and increases sensitivity to GELOX regime. Mol Ther Oncolytics. 2022 May 4;25:288-304. doi: 10.1016/j.omto.2022.04.012. PMID: 35663228; PMCID: PMC9127125.

7. Bioactivity

Biological target:

Icaritin (Anhydroicaritin) potently inhibits proliferation of K562 cells (IC_{50} of 8 μM) and primary CML cells (IC_{50} of 13.4 μM for CML-CP and 18 μM for CML-BC). Icaritin can regulate MAPK/ERK/JNK and JAK2/STAT3 /AKT signalings, also enhances osteogenesis.

In vitro activity

The inhibitory effect of icaritin on tumor cell proliferation was further confirmed in hepatoma cells, prostate cancer cells, breast cancer cells, colorectal cancer cells, and cervical cancer cells, suggesting a broad spectrum of inhibition (Figure S5C).

Reference: iScience. 2022 Aug 22;25(9):104991. https://pubmed.ncbi.nlm.nih.gov/36093042/

In vivo activity

However, the therapeutic effect of ICT (icaritin) on ischemic stroke still remains to be clarified. This study demonstrated that ICT treatment after ischemia effectively reduced cerebral ischemia-reperfusion-associated senescence and apoptosis in an acute ischemic stroke mouse model.

Reference: Molecules. 2022 Sep 7;27(18):5783. https://pubmed.ncbi.nlm.nih.gov/36144517/