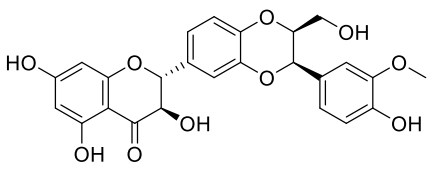
Product data sheet

MedKoo Cat#: 202610 Name: Silibinin CAS#: 22888-70-6 Chemical Formula: $C_{25}H_{22}O_{10}$ Exact Mass: 482.1213 Molecular Weight: 482.44	
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:
Silibinin, also known as silybin, contains both A and B diastereomers. Silibinin is the major active constituent of silymarin, standardized extract of the milk thistle seeds, containing mixture of flavonolignans consisting of among others of silibinin, isosilibinin, silicristin and silidianin. Silibinin itself is mixture of two diastereomers Silibinin A and Silybinin B in approximately equimolar ratio. Both in vitro and animal research suggest that silibinin has hepatoprotective (antihepatotoxic) properties that protect liver cells against toxins.

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	250	518.20

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.07 mL	10.36 mL	20.73 mL
5 mM	0.41 mL	2.07 mL	4.15 mL
10 mM	0.21 mL	1.04 mL	2.07 mL
50 mM	0.04 mL	0.21 mL	0.41 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. Jo AI, Kim MM. Silibinin Inhibits Cell Invasion through the Inhibition of MMPs, p-p38, and IL-1β in Human Fibrosarcoma Cells. Front Biosci (Landmark Ed). 2023 Apr 6;28(4):64. doi: 10.31083/j.fbl2804064. PMID: 37114542.
2. Ranapour S, Motamed N. Effect of Silibinin on the Expression of Mir-20b, Bcl2L11, and Erbb2 in Breast Cancer Cell Lines. Mol Biotechnol. 2023 Dec;65(12):1979-1990. doi: 10.1007/s12033-023-00702-5. Epub 2023 Mar 11. PMID: 36905464.

In vivo study

1. Liu P, Chen W, Kang Y, Wang C, Wang X, Liu W, Hayashi T, Qiu Z, Mizuno K, Hattori S, Fujisaki H, Ikejima T. Silibinin ameliorates STING-mediated neuroinflammation via downregulation of ferroptotic damage in a sporadic Alzheimer's disease model. Arch Biochem Biophys. 2023 Aug;744:109691. doi: 10.1016/j.abb.2023.109691. Epub 2023 Jul 18. PMID: 37473980.
2. Ain QU, Saleem U, Ahmad B, Khalid I. Pharmacological screening of silibinin for antischizophrenic activity along with its acute toxicity evaluation in experimental animals. Front Pharmacol. 2023 Feb 2;14:1111915. doi: 10.3389/fphar.2023.1111915. PMID: 36817163; PMCID: PMC9936411.

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7. Bioactivity

Biological target:

Silibinin is an effective anti-cancer and chemopreventive agent and has been shown to exert multiple effects on cancer cells, including inhibition of both cell proliferation and migration.

In vitro activity

Silibinin may have an inhibitory effect on the enzymes involved in the invasion of human fibrosarcoma cells, potentially influenceing the metastatic ability of tumor cells. in HT1080 cells, silibinin above 20 μM remarkably inhibited the levels of MMP-2 and MMP-9 activation under PMA treatment conditions. Silibinin at 25 μM reduced the levels of MMP-2, IL-1β, ERK-1/2, and p-p38 expression and silibinin above 10 μM inhibited cell invasion on HT1080 cells.

Reference: Front Biosci (Landmark Ed). 2023 Apr 6;28(4):64. https://pubmed.ncbi.nlm.nih.gov/37114542/

In vivo activity

Silibinin is a safe drug with low toxicity and demonstrates significant antipsychotic activity against the positive and negative symptoms of schizophrenia. SIL prevented and reversed ketamine-induced increase in stereotypy and behavioral despair in the forced swim and tail suspension tests.

Reference: Front Pharmacol. 2023 Feb 2;14:1111915. https://pubmed.ncbi.nlm.nih.gov/36817163/

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.