Product data sheet

MedKoo Cat#: 592677	
Name: Salicin	
CAS#: 138-52-3	
Chemical Formula: $C_{13}H_{18}O_7$	
Exact Mass: 286.1053	
Molecular Weight: 286.28	

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:

Salicin inhibits angiogenesis by blocking the ROS-ERK pathways.

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	150	523.96
Water	12.5	43.66

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.49 mL	17.47 mL	34.93 mL
5 mM	0.70 mL	3.49 mL	6.99 mL
10 mM	0.35 mL	1.75 mL	3.49 mL
50 mM	0.07 mL	0.35 mL	0.70 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. Song Y, Tian X, Wang X, Feng H. Vascular protection of salicin on IL-1β-induced endothelial inflammatory response and damages in retinal endothelial cells. Artif Cells Nanomed Biotechnol. 2019 Dec;47(1):1995-2002. doi: 10.1080/21691401.2019.1608220. PMID: 31106593.
2. Wölfle U, Haarhaus B, Kersten A, Fiebich B, Hug MJ, Schempp CM. Salicin from Willow Bark can Modulate Neurite Outgrowth in Human Neuroblastoma SH-SY5Y Cells. Phytother Res. 2015 Oct;29(10):1494-500. doi: 10.1002/ptr.5400. Epub 2015 Jun 19. PMID: 26096905.

In vivo study

1. Jiang Y, Hou J, Liu C, Zhao C, Xu Y, Song W, Shu Z, Wang B. Inhibitory Effect of Salicin on Staphylococcus aureus Coagulase. ChemMedChem. 2023 Sep 27:e202300302. doi: 10.1002/cmdc.202300302. Epub ahead of print. PMID: 37755368.
2. Li Y, Wu Q, Deng Y, Lv H, Qiu J, Chi G, Feng H. D(-)-Salicin inhibits the LPS-induced inflammation in RAW264.7 cells and mouse models. Int Immunopharmacol. 2015 Jun;26(2):286-94. doi: 10.1016/j.intimp.2015.04.016. Epub 2015 Apr 20. PMID: 25907238.

7. Bioactivity

Biological target:

Salicin is a non-selective COX inhibitor with IC50 values > 100 µM for COX-1 and COX-2.

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In vitro activity

Salicin is a protective agent in retinal endothelial cells with potential therapeutic use for retinal disease. Salicin exhibits potent anti-inflammatory properties by reducing oxidative stress, preserving mitochondrial health, and inhibiting the production of inflammatory molecules. It also helps maintain the function of important endothelial components and reduces cytotoxicity.

Reference: Artif Cells Nanomed Biotechnol. 2019 Dec;47(1):1995-2002. https://pubmed.ncbi.nlm.nih.gov/31106593/

In vivo activity

In a pneumonia model of mice infected with S. aureus, salicin reduced the content of lung bacteria, reduce the virulence of S. aureus, and prolonged mouse survival. Salicin was identified as a novel anti-infective candidate compound with the potential to target coagulase and inhibit its activity by binding to it.

Reference: ChemMedChem. 2023 Sep 27:e202300302. https://pubmed.ncbi.nlm.nih.gov/37755368/

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.