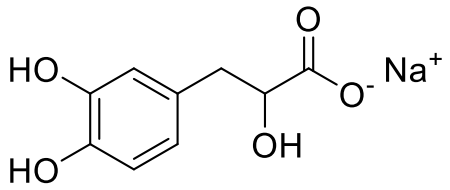
Product data sheet

MedKoo Cat#: 574142 Name: Danshensu sodium CAS#: 67920-52-9 Chemical Formula: $C_9H_9NaO_5$ Exact Mass: 220.0348 Molecular Weight: 220.16	
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:

Danshensu sodium is a salvianolic acid that reduces expression of the autophagy-associated proteins p62, LC3-II, and Beclin-1 and the apoptosis-related proteins Bax and caspase-3, prevents cardiomyocyte damage. It increases heart rate, coronary flow (CF), and left ventricular developed pressure (LVDP). Danshensu reduces infarct size and improves left ventricular function in a rat model of myocardial infarction. It enhances radiation-induced tumor cell death in a Lewis lung carcinoma mouse xenograft model. Danshensu also decreases infarct volume, neuronal apoptosis, production of TNF-α, IL-1β, and IL-6, and superoxide dismutase (SOD) and glutathione peroxidase (GPx) activity in a rat model of cerebral ischemia and reperfusion injury.

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	72.0	327.03
H2O	72.0	327.03

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.54 mL	22.71 mL	45.42 mL
5 mM	0.91 mL	4.54 mL	9.08 mL
10 mM	0.45 mL	2.27 mL	4.54 mL
50 mM	0.09 mL	0.45 mL	0.91 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. Kumar VB, Lin SH, Mahalakshmi B, Lo YS, Lin CC, Chuang YC, Hsieh MJ, Chen MK. Sodium Danshensu Inhibits Oral Cancer Cell Migration and Invasion by Modulating p38 Signaling Pathway. Front Endocrinol (Lausanne). 2020 Sep 30;11:568436. doi: 10.3389/fendo.2020.568436. PMID: 33101201; PMCID: PMC7554528.
2. Zhang N, Zou H, Jin L, Wang J, Zhong MF, Huang P, Gu BQ, Mao SL, Zhang C, Chen H. Biphasic effects of sodium danshensu on vessel function in isolated rat aorta. Acta Pharmacol Sin. 2010 Apr;31(4):421-8. doi: 10.1038/aps.2010.24. Epub 2010 Mar 15. PMID: 20228827; PMCID: PMC4007672.

In vivo study

1. Meng X, Jiang J, Pan H, Wu S, Wang S, Lou Y, Fan G. Preclinical Absorption, Distribution, Metabolism, and Excretion of Sodium Danshensu, One of the Main Water-Soluble Ingredients in Salvia miltiorrhiza, in Rats. Front Pharmacol. 2019 May 29;10:554. doi: 10.3389/fphar.2019.00554. PMID: 31231211; PMCID: PMC6558371.

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2. Wei ZZ, Chen D, Liu LP, Gu X, Zhong W, Zhang YB, Wang Y, Yu SP, Wei L. Enhanced Neurogenesis and Collaterogenesis by Sodium Danshensu Treatment After Focal Cerebral Ischemia in Mice. Cell Transplant. 2018 Apr;27(4):622-636. doi: 10.1177/0963689718771889. PMID: 29984620; PMCID: PMC7020234.

7. Bioactivity

Biological target:

Danshensu (sodium salt) is sodium salt of danshensu from the widely used Chinese herb Danshen that can inhibit phenylephrine- and CaCl2-induced vasoconstriction in Ca2+-free medium.

In vitro activity

The present study aimed at deciphering the effects of a bioactive phytochemical, sodium danshensu, on human oral cancer cell metastasis. he treatment of FaDu and Ca9-22 cells with different doses of sodium danshensu (25, 50, and 100 μM) caused a significant reduction in cellular motility, migration, and invasion, as compared to the untreated cells. This effect was associated with a reduced expression of MMP-2, vimentin and N-cadherin, together with an enhanced expression of E-cadherin and ZO-1. Further investigation on the molecular mechanism revealed that treatment with sodium danshensu caused significant reduction in p38 phosphorylation; however, phosphorylation of ERK1/2 significantly decreased only in FaDu cells, whereas p-JNK1/2 did not show any alteration. Collectively, the present study findings reveal that sodium danshensu execute anti-metastatic effect by suppressing p38 phosphorylation in human oral cancer

Reference: Front Endocrinol (Lausanne). 2020 Sep 30;11:568436. https://pubmed.ncbi.nlm.nih.gov/33101201/

In vivo activity

In ischemic stroke mice, SDS (sodium danshensu) (700 mg/kg, i.p.) was injected 10 min after the onset of the ischemic insult. In the focal ischemic stroke model of the mouse, sham control and stroke animals received vehicle or SDS treatment (700 mg/kg, i.p., 10 min after ischemia and once daily) for 14 days. At 14 days after stroke and SDS or vehicle treatment, Western blot analysis showed that the SDS treatment enhanced the expression of VEGF, BDNF, SDF-1, and eNOS in the perfi-infarct region compared with vehicle controls (Fig. 1A to E). At 28 days after stroke, SDS treatment significantly increased the number of NeuN and BrdU co-labeled cells in the peri-infarct region compared with stroke vehicle controls (Figs. 3C and 3D). These results indicated that the SDS treatment promoted neurogenesis in the post-stroke brain.

Reference: Cell Transplant. 2018 Apr; 27(4): 622–636. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7020234/

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.