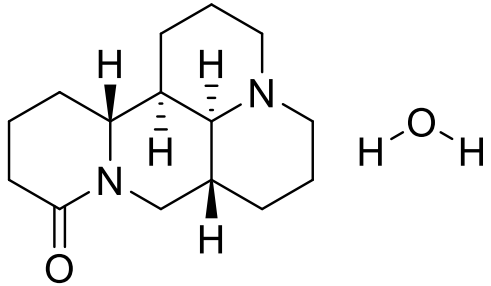


Product data sheet



MedKoo Cat#: 561290 Name: Sophoridine hydrate CAS#: 145572-44-7 (hydrate) Chemical Formula: C ₁₅ H ₂₆ N ₂ O ₂ Molecular Weight: 266.39	
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:

Sophoridine is an antiviral against Coxsackievirus B3. Sophoridine works by regulating cytokine expression which may represent a potential therapeutic agent for viral myocarditis. Sophoridine also has anti-tumor and anti-inflammatory properties.

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	100	378.27

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.75 mL	18.77 mL	37.54 mL
5 mM	0.75 mL	3.75 mL	7.51 mL
10 mM	0.38 mL	1.88 mL	3.75 mL
50 mM	0.08 mL	0.38 mL	0.75 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

- Xu Z, Zhang F, Bai C, Yao C, Zhong H, Zou C, Chen X. Sophoridine induces apoptosis and S phase arrest via ROS-dependent JNK and ERK activation in human pancreatic cancer cells. *J Exp Clin Cancer Res.* 2017 Sep 11;36(1):124. doi: 10.1186/s13046-017-0590-5. Erratum in: *J Exp Clin Cancer Res.* 2020 Nov 26;39(1):263. PMID: 28893319; PMCID: PMC5594456.
- Zhao Z, Zhang D, Wu F, Tu J, Song J, Xu M, Ji J. Sophoridine suppresses lenvatinib-resistant hepatocellular carcinoma growth by inhibiting RAS/MEK/ERK axis via decreasing VEGFR2 expression. *J Cell Mol Med.* 2021 Jan;25(1):549-560. doi: 10.1111/jcmm.16108. Epub 2020 Nov 18. PMID: 33210432; PMCID: PMC7810959.

In vivo study

- Sun J, Wang X, He Y, Tian X, Yuan T, Yang G, Yu T. Sophoridine Counteracts Obesity via Src-Mediated Inhibition of VEGFR Expression and PI3K/AKT Phosphorylation. *Int J Mol Sci.* 2024 Jan 19;25(2):1206. doi: 10.3390/ijms25021206. PMID: 38279206; PMCID: PMC10816114.
- Zhang Y, Zhu H, Ye G, Huang C, Yang Y, Chen R, Yu Y, Cui X. Antiviral effects of sophoridine against coxsackievirus B3 and its pharmacokinetics in rats. *Life Sci.* 2006 Mar 20;78(17):1998-2005. doi: 10.1016/j.lfs.2005.09.034. Epub 2005 Nov 23. PMID: 16309710.

Product data sheet



7. Bioactivity

Biological target:

Sophoradine has diverse biological activities. It reduces viral titers in neonatal rat cardiomyocytes infected with coxsackievirus B3 at concentrations of 1 and 5 µg/ml. Sophoradine inhibits growth and induces apoptosis in SW480 colorectal cancer cells, and decreases tumor growth in a mouse xenograft model. Sophoradine reduces levels of inflammatory markers TNF- α , IL-8, and prostaglandin E2 in a mouse model of carrageenan-induced paw edema when administered at doses of 12.15 and 48.6 mg/kg.

In vitro activity

Sophoridine has potential for pancreatic cancer treatment. Sophoridine killed cancer cells but had low cytotoxicity to normal cells. Pancreatic cancer cells were particularly sensitive. Sophoridine inhibited the proliferation of pancreatic cancer cells and induced cell cycle arrest at S phase and mitochondrial-related apoptosis. Sophoridine induced a sustained activation of the phosphorylation of ERK and JNK and provoked the generation of ROS in pancreatic cancer cells.

Reference: J Exp Clin Cancer Res. 2020 Nov 26;39(1):263. <https://pubmed.ncbi.nlm.nih.gov/28893319/>

In vivo activity

Sophoridine may represent a potential therapeutic agent for viral myocarditis. Sophoridine exhibited obvious antiviral effects both in vitro and in vivo, and serum samples obtained from rats with oral administration of sophoridine reduced the virus titers in infected myocardial cells. The serum concentration profile correlated closely with antiviral activity profile. Sophoridine significantly enhanced mRNA expression of IL-10 and IFN-gamma, but decreased TNF-alpha mRNA expression.

Reference: Life Sci. 2006 Mar 20;78(17):1998-2005. <https://pubmed.ncbi.nlm.nih.gov/16309710/>

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.