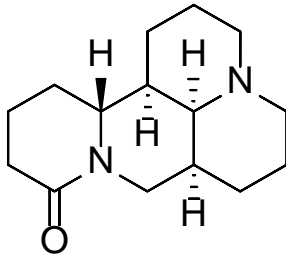


Product data sheet



MedKoo Cat#: 540281 Name: Matrine CAS: 519-02-8 Chemical Formula: C ₁₅ H ₂₄ N ₂ O Exact Mass: 248.1889 Molecular Weight: 248.37		
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:

Matrine is found in Sophora. It displays many biological activities, including inducing apoptosis in hepatoma cells and non-small cell lung cancer cells, decreasing pain responses in opioid-dependent manner, regulating glutamate signaling, and decreasing seizures.

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	10.0	40.26
DMSO	36.67	147.63
Ethanol	41.65	167.69
PBS (pH 7.2)	10.0	40.26
Water	20.0	80.53

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.03 mL	20.13 mL	40.26 mL
5 mM	0.81 mL	4.03 mL	8.05 mL
10 mM	0.40 mL	2.01 mL	4.03 mL
50 mM	0.08 mL	0.40 mL	0.81 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. Zhao B, Hui X, Wang J, Zeng H, Yan Y, Hu Q, Ge G, Lei T. Matrine suppresses lung cancer metastasis via targeting M2-like tumour-associated-macrophages polarization. Am J Cancer Res. 2021 Sep 15;11(9):4308-4328. PMID: 34659889; PMCID: PMC8493404.
2. Zhang Y, Zhang H, Yu P, Liu Q, Liu K, Duan H, Luan G, Yagasaki K, Zhang G. Effects of matrine against the growth of human lung cancer and hepatoma cells as well as lung cancer cell migration. Cytotechnology. 2009 Apr;59(3):191-200. doi: 10.1007/s10616-009-9211-2. Epub 2009 Aug 2. PMID: 19649719; PMCID: PMC2774570.

In vivo study

1. Huang P, Hu F, Yang ZB, Pan Y, Zhou R, Yan YN, Wang HZ, Wang C. Matrine regulates Th1/Th2 inflammatory responses by inhibiting the Hsp90/NF-κB signaling axis to alleviate atopic dermatitis. Kaohsiung J Med Sci. 2023 Feb 9. doi: 10.1002/kjm2.12655. Epub ahead of print. PMID: 36757049.

Product data sheet



2. Fu S, Zhao N, Jing G, Yang X, Liu J, Zhen D, Tang X. Matrine induces papillary thyroid cancer cell apoptosis in vitro and suppresses tumor growth in vivo by downregulating miR-182-5p. Biomed Pharmacother. 2020 Aug;128:110327. doi: 10.1016/j.biopha.2020.110327. Epub 2020 Jun 4. PMID: 32505823.

7. Bioactivity

Biological target:

Matrine (Matridin-15-one) is an alkaloid that can act as a kappa opioid receptor and u-receptor agonist.

In vitro activity

Matrine significantly inhibited the in vitro and ex vivo growth of human non-small cell lung cancer A549 and hepatoma SMMC-7721 cells. Matrine induced the apoptosis in A549 and SMMC-7721 cells. Furthermore, matrine significantly suppressed the A549 cell migration without reducing the cell viability. In addition, matrine dramatically reduced the secretion of vascular endothelial growth factor A in A549 cells.

Reference: Cytotechnology. 2009 Apr;59(3):191-200. <https://pubmed.ncbi.nlm.nih.gov/19649719/>

In vivo activity

Matrine decreased the Th2 cytokine levels in the mouse ear tissues and serum, and it also significantly repressed inflammatory cytokines (thymus activation regulated chemokine and interleukin-6) secretions by repressing the Hsp90/NF-κB signaling axis in inflamed HaCaT cells. Furthermore, matrine inhibited Th2 differentiation of CD4+ T cells when co-cultured with inflamed HaCaT cells.

Reference: Kaohsiung J Med Sci. 2023 Feb 9. <https://pubmed.ncbi.nlm.nih.gov/36757049/>

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.