

Product data sheet



MedKoo Cat#: 591619 Name: Geraniol CAS#: 106-24-1 Chemical Formula: C10H18O Exact Mass: 154.1358 Molecular Weight: 154.25	
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:

Geraniol is a monoterpene and an alcohol. It is the primary component of rose oil, palmarosa oil, and citronella oil. It is a colorless oil, although commercial samples can appear yellow.

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	100.0	648.30
Water	1.0	6.48

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	6.48 mL	32.41 mL	64.83 mL
5 mM	1.30 mL	6.48 mL	12.97 mL
10 mM	0.65 mL	3.24 mL	6.48 mL
50 mM	0.13 mL	0.65 mL	1.30 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

- Huang Y, Yang XL, Ni YH, Xu ZM. Geraniol suppresses proinflammatory mediators in phorbol 12-myristate 13-acetate with A23187-induced HMC-1 cells. *Drug Des Devel Ther.* 2018 Sep 11;12:2897-2903. doi: 10.2147/DDDT.S145702. PMID: 30254419; PMCID: PMC6141105.
- Lee S, Park YR, Kim SH, Park EJ, Kang MJ, So I, Chun JN, Jeon JH. Geraniol suppresses prostate cancer growth through down-regulation of E2F8. *Cancer Med.* 2016 Oct;5(10):2899-2908. doi: 10.1002/cam4.864. Epub 2016 Sep 28. PMID: 27683099; PMCID: PMC5083744.

In vivo study

- AlAsmari AF, Ali N, Alharbi M, Alqahtani F, Alasmari F, Almoqbel D, AlSwayyed M, Alshammari A, Alanazi MM, Alhoshani A, Al-Harbi NO. Geraniol Ameliorates Doxorubicin-Mediated Kidney Injury through Alteration of Antioxidant Status, Inflammation, and Apoptosis: Potential Roles of NF-κB and Nrf2/Ho-1. *Nutrients.* 2022 Apr 13;14(8):1620. doi: 10.3390/nu14081620. PMID: 35458182; PMCID: PMC9031157.
- Atef MM, Emam MN, Abo El Gheit RE, Elbeltagi EM, Alshenawy HA, Radwan DA, Younis RL, Abd-Ellatif RN. Mechanistic Insights into Ameliorating Effect of Geraniol on D-Galactose Induced Memory Impairment in Rats. *Neurochem Res.* 2022 Jun;47(6):1664-1678. doi: 10.1007/s11064-022-03559-3. Epub 2022 Mar 2. PMID: 35235140; PMCID: PMC9124169.

Product data sheet



7. Bioactivity

Biological target:

Geraniol, an olefinic terpene, was found to inhibit growth of *Candida albicans* and *Saccharomyces cerevisiae* strains.

In vitro activity

This study then explored the effects of geraniol in PMACI-stimulated HMC-1 cells. Mast cell degranulation in the nasal mucosa released pro-inflammatory cytokines such as TNF- α , IL-1 β , IL-8, and IL-6, chemokines such as MCP-1, and histamine, a major biogenic amine. In line with previous reports, we demonstrated that PMACI significantly enhanced HMC-1 cell expression of TNF- α , IL-1 β , IL-6, and MCP-1 as well as histamine (Figure 2B–F). On the other hand, geraniol concentrations of 40, 80, and 160 $\mu\text{mol/L}$ attenuated expression levels of TNF- α , IL-1 β , and IL-6. Thirty percent, 21.6%, and 27.0% of IL-1 β , IL-6, and TNF- α , respectively, were inhibited at geraniol concentrations of 160 $\mu\text{mol/L}$. Geraniol did not significantly alter MCP-1 expression. Geraniol was also found to inhibit mRNA expression of TNF- α , IL-1 β , IL-6, and MCP-1 (Figure 3A–D).

Reference: Drug Des Devel Ther. 2018 Sep 11;12:2897-2903. <https://pubmed.ncbi.nlm.nih.gov/30254419/>

In vivo activity

Compared with the control group, a single Dox injection (20 mg/kg) to rats resulted in a substantial rise of MDA along with significant reductions in GSH content and CAT activity (Figure 2A–C). It also significantly decreased the gene and protein expression of Nrf-2, Ho-1, GPx-1, and SOD-2 (Figure 3A–G). However, prophylactic supplementation with geraniol substantially recovered the modifications of these parameters in a dose-dependent manner. These findings reveal the potential antioxidant action of geraniol.

Reference: Reference: Nutrients. 2022 Apr 13;14(8):1620. <https://pubmed.ncbi.nlm.nih.gov/35458182/>

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.