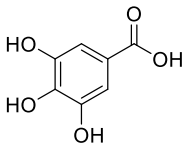
Product data sheet

MedKoo Cat#: 540149 Name: Gallic acid CAS#: 149-91-7 Chemical Formula: $C_7H_6O_5$ Exact Mass: 170.0215 Molecular Weight: 170.12	
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:

Gallic acid is found in varitingous plant sources and used to determine phenol content of analytes. It displays many biological activities, including inducing Fas-mediated apoptosis in breast cancer cells inhibiting the production of α-hemolysin and cell adhesion in Staphylococcus, and increasing levels of antioxidatice enzymes, limiting oxidative damage.

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	50.0	293.91
DMF	25.0	146.96
Ethanol	25.0	146.96
PBS (pH 7.2)	2.0	11.76
Water	7.0	41.15

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	5.88 mL	29.39 mL	58.78 mL
5 mM	1.18 mL	5.88 mL	11.76 mL
10 mM	0.59 mL	2.94 mL	5.88 mL
50 mM	0.12 mL	0.59 mL	1.18 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. Cai L, Wei Z, Zhao X, Li Y, Li X, Jiang X. Gallic acid mitigates LPS-induced inflammatory response via suppressing NF-κB signalling pathway in IPEC-J2 cells. J Anim Physiol Anim Nutr (Berl). 2021 Jul 20. doi: 10.1111/jpn.13612. Epub ahead of print. PMID: 34288130.
2. Ko EB, Jang YG, Kim CW, Go RE, Lee HK, Choi KC. Gallic Acid Hindered Lung Cancer Progression by Inducing Cell Cycle Arrest and Apoptosis in A549 Lung Cancer Cells via PI3K/Akt Pathway. Biomol Ther (Seoul). 2021 Jul 15. doi: 10.4062/biomolther.2021.074. Epub ahead of print. PMID: 34261818.

In vivo study

1. Lin X, Wang G, Liu P, Han L, Wang T, Chen K, Gao Y. Gallic acid suppresses colon cancer proliferation by inhibiting SRC and EGFR phosphorylation. Exp Ther Med. 2021 Jun;21(6):638. doi: 10.3892/etm.2021.10070. Epub 2021 Apr 16. PMID: 33968169; PMCID: PMC8097205.

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2. Sanjay S, Girish C, Toi PC, Bobby Z. Gallic acid attenuates isoniazid and rifampicin-induced liver injury by improving hepatic redox homeostasis through influence on Nrf2 and NF-κB signalling cascades in Wistar Rats. J Pharm Pharmacol. 2021 Mar 8;73(4):473-486. doi: 10.1093/jpp/rgaa048. PMID: 33793834.

7. Bioactivity

Biological target:

Gallic acid (3,4,5-Trihydroxybenzoic acid) is a natural polyhydroxyphenolic compound and an free radical scavenger to inhibit cyclooxygenase-2 (COX-2).

In vitro activity

Results showed that H_2O_2 significantly decreased catalase (CAT) secretion and CAT mRNA abundance in the cells ($p < 0.05$), while pretreatment with gallic acid did not prevent the decrease in CAT expression induced by $H_2 O_2$. However, gallic acid pretreatment mitigated the increased expression of the tumour necrosis factor-α and interleukin-8 genes caused by LPS in IPEC-J2 cells ($p < 0.05$). In addition, pretreatment with gallic acid significantly suppressed phosphorylation of NF-κB and IκBα in LPS-stimulated IPEC-J2 cells.

Reference: J Anim Physiol Anim Nutr (Berl). 2021 Jul 20. https://pubmed.ncbi.nlm.nih.gov/34288130/

In vivo activity

In vivo, GA (gallic acid) prevented tumor growth, promoted tumor apoptosis and decreased the level of p-SRC, p-EGFR, p-STAT3 and p-AKT in mice.

Reference: Exp Ther Med. 2021 Jun; 21(6): 638. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8097205/

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.