# Product data sheet

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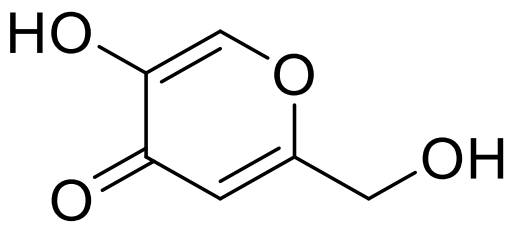
|---|---|
| MedKoo Cat#: 561662<br>Name: Kojic Acid<br>CAS: 501-30-4<br>Chemical Formula: $C_6H_6O_4$<br>Exact Mass: 142.0266<br>Molecular Weight: 142.11 |  |
| Product supplied as: | Powder |
| Purity (by HPLC): | ≥ 98% |
| Shipping conditions | Ambient temperature |
| Storage conditions: | Powder: -20°C 3 years; 4°C 2 years. |
| | In solvent: -80°C 3 months; -20°C 2 weeks. |

**1. Product description:**

Kojic Acid is a tyrosinase inhibitor. It is a chelation agent produced by several species of fungi, especially Aspergillus oryzae, which has the Japanese common name koji. It is a mild inhibitor of the formation of pigment in plant and animal tissues, and is used in food and cosmetics to preserve or change colors of substances. It also appears to possess marked protective (radioresistance) effects from radiation-induced 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 | 48.0 | 337.77 |
| Ethanol | 5.0 | 35.18 |
| PBS (pH 7.2) | 5.0 | 35.18 |
| Water | 50.0 | 351.84 |

**4. Stock solution preparation table:**

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 7.04 mL | 35.18 mL | 70.37 mL |
| 5 mM | 1.41 mL | 7.04 mL | 14.07 mL |
| 10 mM | 0.70 mL | 3.52 mL | 7.04 mL |
| 50 mM | 0.14 mL | 0.70 mL | 1.41 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. Pereira JAL, Moraes LS, Sena CBC, Nascimento JLMD, Rodrigues APD, Silva SHMD, Silva EO. Inhibition of Melanization by Kojic Acid Promotes Cell Wall Disruption of the Human Pathogenic Fungus Fonsecaea sp. Pathogens. 2022 Aug 17;11(8):925. doi: 10.3390/pathogens11080925. PMID: 36015045; PMCID: PMC9414132.
2. Wei X, Luo D, Yan Y, Yu H, Sun L, Wang C, Song F, Ge H, Qian H, Li X, Tang X, Liu P. Kojic acid inhibits senescence of human corneal endothelial cells via NF-κB and p21 signaling pathways. Exp Eye Res. 2019 Mar;180:174-183. doi: 10.1016/j.exer.2018.12.020. Epub 2018 Dec 28. PMID: 30597146.

In vivo study

1. Wang K, Liu C, Di CJ, Ma C, Han CG, Yuan MR, Li PF, Li L, Liu YX. Kojic acid protects C57BL/6 mice from gamma-irradiation induced damage. Asian Pac J Cancer Prev. 2014;15(1):291-7. doi: 10.7314/apjcp.2014.15.1.291. PMID: 24528043.

2. Rodrigues AP, Farias LH, Carvalho AS, Santos AS, do Nascimento JL, Silva EO. A novel function for kojic acid, a secondary metabolite from Aspergillus fungi, as antileishmanial agent. PLoS One. 2014 Mar 12;9(3):e91259. doi: 10.1371/journal.pone.0091259. PMID: 24621481; PMCID: PMC3951352.

**7. Bioactivity**

Biological target:

Kojic Acid is a tyrosinase inhibitor.

In vitro activity

In addition, kojic acid could alleviate HUVEC tube formation induced by senescent HCEC, which could be reversed by p-NF-κB inhibitor. The p21 siRNA could alleviate HUVEC spheroid sprouting induced by senescent HCEC. These results indicated that kojic acid might inhibit HCEC senescence and following resulted angiogenesis via NF-κB and p21 signaling pathways, possibly through downregulation of galectin 8 and laminins.

Reference: Exp Eye Res. 2019 Mar;180:174-183. https://pubmed.ncbi.nlm.nih.gov/30597146/

In vivo activity

The results from the cytotoxicity and cell viability assays demonstrated that KA (kojic acid) could highly protect Chinese hamster ovary (CHO) cells against ionizing radiation with low toxicity. In summary, KA provides marked radioprotective effects both in vivo and in vitro.

Reference: Asian Pac J Cancer Prev. 2014;15(1):291-7. https://pubmed.ncbi.nlm.nih.gov/24528043/

*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.*