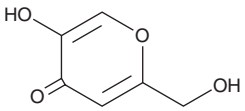
PRODUCT INFORMATION

Kojic Acid

Item No. 22712

CAS Registry No.: 501-30-4
Formal Name: 5-hydroxy-2-(hydroxymethyl)-4H-pyran-4-one
Synonym: NSC 1942
MF: $C_6H_6O_4$
FW: 142.1
Purity: ≥98%
UV/Vis.: λ_{max}: 218, 272 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Kojic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the kojic acid in the solvent of choice. Kojic acid is soluble in organic solvents such as ethanol and DMSO, which should be purged with an inert gas. The solubility of kojic acid in these solvents is approximately 5 and 16 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of kojic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of kojic acid in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Kojic acid is a fungal metabolite that inhibits tyrosinase, an enzyme involved in melanin synthesis, with an IC_{50} value of 30.6 µM for mushroom tyrosinase.[1] It decreases growth of *Leishmania* parasites *in vitro* and *in vivo*, and it protects mice from damage induced by gamma irradiation.[2,3] Kojic acid has been used as a food additive to prevent enzymatic browning.[4] Formulations containing kojic acid are used in the treatment of hyperpigmentation disorders.[5]

References

1. Lee, Y.S., Park, J.H., Kim, M.H., *et al.* Synthesis of tyrosinase inhibitory kojic acid derivative. *Arch. Pharm. (Weinheim)* **339(3)**, 111-114 (2006).
2. Rodrigues, A.P., Farias, L.H., Carvalho, A.S., *et al.* A novel function for kojic acid, a secondary metabolite from *Aspergillus* fungi, as antileishmanial agent. *PLoS One* **9(3)**, e91259 (2014).
3. Wang, K., Liu, C., Di, C.-J., *et al.* Kojic acid protects C57BL/6 mice from gamma-irradiation induced damage. *Asian Pac. J. Cancer Prev.* **15(1)**, 291-297 (2014).
4. Burdock, G.A., Soni, M.G., and Carabin, I.G. Evaluation of health aspects of kojic acid in food. *Regul. Toxicol. Pharmacol.* **33(1)**, 80-101 (2001).
5. Kim, Y.M., Yun, J., Lee, C.K., *et al.* Oxyresveratrol and hydroxystilbene compounds. Inhbitory effect on tyrosinase and mechanism of action. *J. Biol. Chem.* **277(18)**, 16340-16344 (2002).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM