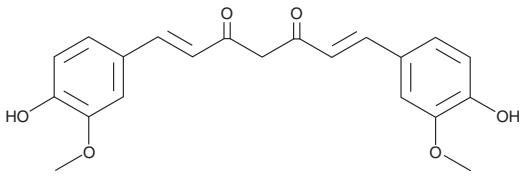
PRODUCT INFORMATION

Curcumin

Item No. 81025

CAS Registry No.: 458-37-7
Formal Name: 1,7-*bis*(4-hydroxy-3-methoxyphenyl)-1E,6E-heptadiene-3,5-dione
Synonyms: Indian Saffron, Turmeric yellow
MF: $C_{21}H_{20}O_6$
FW: 368.4
Purity: ≥90%
UV/Vis.: λ_{max}: 427 nm
Supplied as: A crystalline solid
Storage: Room temperature
Stability: ≥2 years
Item Origin: Plant/Turmeric



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

Laboratory Procedures

Curcumin is supplied as a crystalline solid. A stock solution may be made by dissolving the curcumin in the organic solvent acetone, which should be purged with an inert gas, at a concentration of approximately 20 mg/ml.

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. A control using the solvent in the absence of curcumin will address this potential variable. Organic solvent-free aqueous solutions of curcumin are difficult to prepare, and it may precipitate at concentrations greater than 0.1 mg/ml, depending on the pH of the aqueous solution. Its solubility is greatly increased in basic solutions. The solubility of curcumin in 0.1 M NaOH is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than 12 hours.

Description

Curcumin is the major yellow pigment in turmeric and curry and has antioxidant, anti-inflammatory, and antitumor activities.[1-4] It inhibits nitric oxide (NO) production (IC_{50} = 6 µM) and reduces inducible nitric oxide synthase (iNOS) activity in LPS-stimulated RAW 264.7 cells.[1] Curcumin inhibits release of histamine and the inflammatory cytokines TNF-α, IL-1β, IL-6, and IL-8 from HMC-1 mast cells.[2] *In vivo*, curcumin decreases serum levels of histamine and TNF-α, inhibits histopathological changes of nasal mucosa, and decreases the number of sneezes and nasal rubbing in a mouse model of ovalbumin-induced rhinitis. Curcumin (100 or 200 mg/kg) prevents ovalbumin-induced accumulation of 3-nitrotyrosine (3-NT), a marker of oxidative stress, in mouse heart. Topical administration of curcumin (1-10 µmol) reduces the number of tumors induced by phorbol 12-myristate 13-acetate (TPA; Item No. 10008014) in mouse skin.[3] Dietary administration of curcumin reduces the number of tongue neoplasms and preneoplastic lesions induced by 4-nitroquinoline 1-oxide (4-NQO) in rats.[4]

References

1. Brouet, I. and Ohshima, H. *Biochem. Biophys. Res. Commun.* **206**, 533-540 (1995).
2. Zhang, N., Li, H., Jia, J., *et al. Cell. Immunol.* **298(1-2)**, 88-95 (2015).
3. Conney, A.H., Lysz, T., Ferraro, T., *et al. Adv. Enzyme Regul.* **31**, 385-396 (1991).
4. Tanaka, T., Makita, H., Ohnishi, M., *et al. Cancer Res.* **54(17)**, 4653-4659 (1994).

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