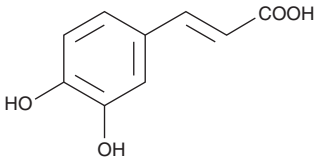
PRODUCT INFORMATION

Caffeic Acid

Item No. 70602

CAS Registry No.: 331-39-5
Formal Name: 3-(3,4-dihydroxyphenyl)-2-propenoic acid
Synonym: 3,4-Dihydroxycinnamic Acid
MF: $C_9H_8O_4$
FW: 180.2
Purity: ≥97%
Supplied as: A crystalline solid
Storage: Room temperature
Stability: ≥2 years



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

Laboratory Procedures

Caffeic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the caffeic acid in the solvent of choice. Caffeic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of caffeic acid in these solvents is approximately 7 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. If an organic solvent-free aqueous solution is needed, it can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of caffeic acid in PBS (pH 7.2) is approximately 0.65 mg/ml. Store aqueous solutions of caffeic acid on ice and use within 12 hours of preparation. Although the aqueous solutions of caffeic acid may be stable for more than 12 hours, we strongly recommend using a fresh preparation each day.

Description

Caffeic acid inhibits both 5- and 12-lipoxygenase (LO) in a dose-dependent manner.[1] Depending on the type of assay, the reported IC_{50} for 5-LO inhibition is between 3.7 µM and 72 µM.[1-3] The inhibition of 12-LO by caffeic acid also shows variation; its IC_{50} has been reported between 5.1 µM and 30 µM.[1-3]

References

1. Koshihara, Y., Neichi, T., Murota, S., *et al.* Caffeic acid is a selective inhibitor for leukotriene biosynthesis. *Biochim. Biophys. Acta* **792,** 92-97 (1984).
2. Kohyama, N., Nagata, T., Fujimoto, S., *et al.* Inhibition of arachidonate lipoxygenase activities by 2-(3,4-dihydroxyphenyl)ethanol, a phenolic compound from Olives. *Biosci. Biotech. Biochem.* **61,** 347-350 (1997).
3. Rao, C.V., Desai, D., Simi, B., *et al.* Inhibitory effect of caffeic acid esters on azoxymethane-induced biochemical changes and aberrant crypt foci formation in rat colon. *Cancer Res.* **53,** 4182-4188 (1993).

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