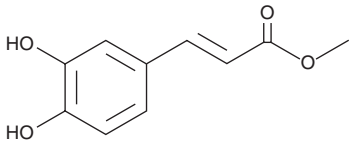
PRODUCT INFORMATION

Caffeic Acid methyl ester

Item No. 17873

CAS Registry No.: 3843-74-1
Formal Name: 3-(3,4-dihydroxyphenyl)-2-propenoic acid, methyl ester
Synonyms: Methyl Caffeate, Methyl 3,4-dihydroxycinnamate
MF: $C_{10}H_{10}O_4$
FW: 194.2
Purity: ≥95%
UV/Vis.: λ_{max}: 219, 245, 330 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

Caffeic acid methyl ester is supplied as a crystalline solid. A stock solution may be made by dissolving the caffeic acid methyl ester in the solvent of choice, which should be purged with an inert gas. Caffeic acid methyl ester is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of caffeic acid methyl ester in ethanol is approximately 20 mg/ml and approximately 5 mg/ml in DMSO and DMF.

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 caffeic acid methyl ester can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of caffeic acid methyl ester in PBS (pH 7.2) is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Caffeic acid methyl ester is an ester of a naturally occurring phenolic compound found in *P. amplexicaule var. sinense* and *S. torvum* fruits. At 40 mg/kg, it demonstrates antihyperglycemic and antidiabetic activity in diabetic rats, upregulating GLUT4 and regenerating pancreatic β-cells.[1] At 10 mg/kg, it can induce anti-inflammatory and antinociceptive effects in rat models of edema and pain, inhibiting nitric oxide and prostaglandin E_2 production, as well as tumor necrosis factor-α release.[2]

References

1. Gandhi, G.R., Ignacimuthu, S., Paulraj, M.G., *et al*. Antihyperglycemic activity and antidiabetic effect of methyl caffeate isolated from *Solanum torvum* Swartz. fruit in streptozotocin induced diabetic rats. *Eur. J. Pharmacol.* **670**, 623-631 (2011).
2. Shin, K.-M., Kim, I.-T., Park, Y.-M., *et al*. Anti-inflammatory effect of caffeic acid methyl ester and its mode of action through the inhibition of prostaglandin E_2, nitric oxide and tumor necrosis factor-α production. *Biochem. Pharmacol.* **68**, 2327-2336 (2004).

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