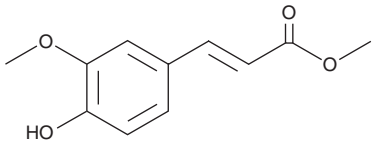
PRODUCT INFORMATION

Ferulic Acid methyl ester

Item No. 17881

CAS Registry No.: 2309-07-1
Formal Name: 3-(4-hydroxy-3-methoxyphenyl)-2-propenoic acid, methyl ester
Synonyms: Methyl Ferulate, Methyl 4'-hydroxy-3'-methoxycinnamate
MF: $C_{11}H_{12}O_4$
FW: 208.2
Purity: ≥98%
UV/Vis.: λ_{max}: 219, 237, 326 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

Ferulic Acid methyl ester is supplied as a crystalline solid. A stock solution may be made by dissolving the ferulic Acid methyl ester in the solvent of choice, which should be purged with an inert gas. Ferulic Acid methyl ester is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ferulic Acid methyl ester in ethanol and DMF is approximately 20 mg/ml and approximately 10 mg/ml in DMSO.

Ferulic Acid methyl ester is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ferulic Acid methyl ester should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Ferulic Acid methyl ester has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Ferulic acid is a hydroxycinnamic acid that is abundant in plants and originally derived from giant fennel (*F. communis*). This naturally-occurring phenolic has antioxidant activities that provide protection against inflammation and cancer.[1-4] Ferulic acid methyl ester is a lipophilic derivative of ferulic acid, demonstrating increased ability to cross cell membranes.[5] Ferulic acid methyl ester has less antioxidant capacity than ferulic acid in neuronal PC12 cells (IC_{50} = 74.7 µM for ferulic acid ethyl ester *vs.* 44.6 µM for ferulic acid, 2,2-diphenyl-1-picrylhydrazyl radical scavenging).[6] Ferulic acid methyl ester, at 10-25 µg/ml, inhibits the release of pro-inflammatory cytokines, blocks the expression of COX-2, and reduces nitric oxide generation from LPS-stimulated macrophages.[7]

References

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3. Iwahashi, H., Nishizaki, K., and Takagi, I. *Biochem. J.* **361**, 57-66 (2002).
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5. Sultana, R. Biochim. *Biophys. Acta* **1822(5)**, 748-752 (2012).
6. Garrido, J., Gaspar, A., Garrido, E.M., *et al. Biochimie* **94(4)**, 961-967 (2012).
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