

Product Information

Fumagillin from *Aspergillus fumigatus*

Product Number **F 6771**
Storage Temperature -0 °C

Product Description

Molecular Formula: C₂₆H₃₄O₇

Molecular Weight: 458.6

CAS Number: 23110-15-8

Melting Point: 194-195 °C¹

Specific Rotation: -26.6°

(25 °C, 10 mg/ml, 95% ethanol)¹

λ_{\max} : 156.0 (335 nm), 146.5 (351 nm)

(0.004 mg/ml, 0.04% chloroform in alcohol)¹

Synonyms: [3R-[3 α ,4 α (2R*,3R*),5 β 6 β (all-E)]]-2,4,6,8-decatetraenedioic acid, mono[5-methoxy-4-[2-methyl-3-(3-methyl-2-butenyl)oxiranyl]-1-oxaspiro[2.5]oct-6-yl] ester; 2,4,6,8-decatetraenedioic acid mono[4-(1,2-epoxy-1,5-dimethyl-4-hexenyl)-5-methoxy-1-oxaspiro[2.5]oct-6-yl] ester; 4-(1,2-epoxy-1,6-dimethylhex-4-enyl)-5-methoxy-1-oxaspiro[2.5]oct-6-yl hydrogen deca-2,4,6,8-tetraenedioate^{1,2}

Fumagillin is an acyclic antibiotic that is produced by some strains of *Aspergillus fumigatus*. It has particular activity against Microsporidia and various amoeba species.^{1,2} Fumagillin has also been demonstrated to be an inhibitor of endothelial cell proliferation and angiogenesis.^{3,4} Fumagillin analogues that also inhibit angiogenesis and kinase and phosphorylation activity have been described.^{5,6,7}

An investigation of ideal carbon and nitrogen source conditions for the production of fumagillin by cultured *Aspergillus fumigatus* has been reported. Optimal conditions utilized 30 g/L xylan and 50 g/L mannose as the best carbon sources, and 9 g/L L-glutamic acid as the best nitrogen source.⁸

One specific molecular target of fumagillin is the eukaryotic enzyme methionine aminopeptidase type II (MetAP-II). A molecular dynamics and computer modeling study has compared the selectivity of fumagillin for MetAP-II to the similar enzyme MetAP-I at their respective enzyme active sites.⁹

HPLC methods for the analysis of fumagillin and its decomposition products have been published. These may be utilized for analysis of fumagillin in naturally occurring materials such as honey and fish.¹⁰⁻¹³

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in ethanol (1 mg/ml), with heat as needed, yielding a clear, colorless to light yellow solution. It is also soluble in such organic solvents such as methanol and chloroform, and in aqueous solutions of bicarbonates and alkali hydroxides. This product is essentially insoluble in water, dilute acids, and saturated hydrocarbons.¹ It should be stored protected from room fluorescent lights to prevent photodegradation.¹

References

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