Usnic Acid
Item No. 22585

CAS Registry No.: 125-46-2
Formal Name: 2,6-diacetyl-7,9-dihydroxy-8,9b-dimethyl-1,3(2H,9bH)-dibenzofurandione
Synonym: NSC 8517
MF: C_{18}H_{16}O_{7}
FW: 344.3
Purity: ≥98%
UV/Vis.: λ_{max}: 233, 282 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years

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

Laboratory Procedures

Usnic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the usnic acid in the solvent of choice. Usnic acid is soluble in the organic solvent dimethyl formamide (DMF), which should be purged with an inert gas, at a concentration of approximately 2.5 mg/ml.

Usnic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, usnic acid should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Usnic acid has a solubility of approximately 0.02 mg/ml in a 1:40 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Usnic acid is a lichen metabolite with antioxidant, anticancer, antifungal, antiprotozoal, and antimicrobial activities.¹⁻⁵ Usnic acid (>50 mg/kg) reduces the number of indomethacin-induced gastric ulcers in rats through decreased lipid peroxidation and decreased myeloperoxidase activity.¹ It is fungicidal against C. orthopsilosis and C. parapsilosis (IC_{50} = 7.8 and 15.6 μg/ml, respectively) and bactericidal against seven vancomycin-resistant E. faecalis strains (MIC = 125 μg/ml).²,³ Usnic acid (25 mg/kg, injected intralesionally) reduces L. amazonensis parasite loads by 72.3% in footpads of infected mice.⁴ It also reduces growth of A2780, HeLa, MCF-7, SK-BR-3, HT-29, HCT116, HL-60, and Jurkat cancer cells in vitro (IC_{50} = 48.5-199 μM).⁵

References