Phloretin
Item No. 14452

CAS Registry No.: 60-82-2
Formal Name: 3-(4-hydroxyphenyl)-1-(2,4,6-trihydroxyphenyl)-1-propanone
Synonyms: NSC 407292, RJC 02792
MF: C_{15}H_{14}O_{5}
FW: 274.3
Purity: ≥98%
UV/Vis.: \(\lambda_{\text{max}}\): 225, 287 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years

Laboratory Procedures

Phloretin is supplied as a crystalline solid. A stock solution may be made by dissolving the phloretin in the solvent of choice, which should be purged with an inert gas. Phloretin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of phloretin in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

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

Description

Phloretin is a natural phenol which inhibits a variety of transporters. It inhibits the monocarboxylate transporters MCT1 and MCT2 (IC\text{50} = 28 and 14 \(\mu\)M, respectively), restricting the rapid transport of monocarboxylates like lactate and pyruvate across the plasma membrane.\textsuperscript{1} Phloretin also blocks the sodium/D-glucose cotransporter (K\text{m} = 86 \(\mu\)M) and the human concentrative nucleoside transporter 3 (K\text{m} = 32 \(\mu\)M).\textsuperscript{2,3}

References