Combretastatin A1
Item No. 19750

CAS Registry No.: 109971-63-3
Formal Name: 3-methoxy-6-[(1Z)-2-(3,4,5-trimethoxyphenyl)ethenyl]-1,2-benzenediol
Synonym: CA1
MF: C_{18}H_{20}O_{6}
FW: 332.4
Purity: ≥98%
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

Combretastatin A1 is supplied as a crystalline solid. A stock solution may be made by dissolving the combretastatin A1 in the solvent of choice. Combretastatin A1 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of combretastatin A1 in ethanol is approximately 3 mg/ml and approximately 5 mg/ml in DMSO and DMF. Combretastatin A1 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, combretastatin A1 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Combretastatin A1 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

Combretastatin A1 is a cis-stilbene originally isolated from *C. caffrum* that inhibits microtubule assembly (IC\textsubscript{50} = 2 µM) by binding to the colchicine (Item No. 9000760) binding site on β-tubulin.\textsuperscript{1,2} It inhibits proliferation of hepatocellular carcinoma (IC\textsubscript{50} = 9.2-728.2 nM) and other carcinoma cell lines (IC\textsubscript{50} = 12.2-2,247 nM).\textsuperscript{2} Combretastatin A1 increases apoptosis of HepG2 cells in a GSK3β-dependent manner by decreasing the levels of MCL-1 and β-catenin. It inhibits tumor growth in a hepatocellular carcinoma mouse xenograft model when administered at doses of 2 or 4 mg/kg for 4 weeks. It also enhances the effects of carboplatin (Item No. 13112), paclitaxel (Item No. 10461), and cisplatin (Item No. 13119) in murine models of cancer.\textsuperscript{3,4} Combretastatin A1 decreases functional vascular volume within hours in a well-vascularized murine colon adenocarcinoma model.\textsuperscript{5}

References