(-)-Warfarin
Item No. 13531

CAS Registry No.: 5543-57-7
Formal Name: 4-hydroxy-3-[(1S)-3-oxo-1-phenylbutyl]-2H-1-benzopyran-2-one
Synonym: (S)-Warfarin
MF: C_{19}H_{16}O_{4}
FW: 308.3
Purity: ≥98%
UV/Vis.: \(\lambda_{\text{max}}^{\text{abs}}\) 206, 272, 283, 306 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

(-)-Warfarin is supplied as a crystalline solid. A stock solution may be made by dissolving the (-)-warfarin in the solvent of choice. (-)-Warfarin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of (-)-warfarin is approximately 5 mg/ml in ethanol and approximately 25 mg/ml in DMSO and DMF.

Description

(-)-Warfarin is a component of (±)-warfarin (Item No. 13566). It is an anticoagulant that interferes with interconversion of vitamin K and vitamin K epoxide and the role of vitamin K in carboxylation of several clotting cascade proteins, inhibiting the initiation of clotting.\(^1\) In vivo, (-)-warfarin slows formation of the prothrombin complex and exhibits 6.6-fold more potent anticoagulant activity than (+)-warfarin (Item No. 13526) in rats.\(^2\) (-)-Warfarin is primarily metabolized by the cytochrome P450 (CYP) isoform CYP2C9 and genetic polymorphisms in this enzyme, as well as other compounds metabolized by CYP2C9, increase the potential for catastrophic bleeding complications. Formulations containing warfarin have been used to treat and prevent blood clots in atrial fibrillation, heart valve replacement, venous thrombosis, and pulmonary embolism.

References