PRODUCT INFORMATION

(S)-Mephenytoin
Item No. 11913

CAS Registry No.: 70989-04-7
Formal Name: (S)-5-ethyl-3-methyl-5-phenyl-2,4-imidazolidinedione
Synonyms: (+)-Mephenytoin, (S)-5-ethyl-3-methyl-5-phenylhydantoin
MF: C12H14N2O2
FW: 218.3
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

(S)-Mephenytoin is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-mephenytoin in the solvent of choice. (S)-Mephenytoin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of (S)-mephenytoin in ethanol is approximately 15 mg/ml and approximately 25 mg/ml in DMSO and DMF. (S)-Mephenytoin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (S)-mephenytoin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. (S)-Mephenytoin 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

(S)-Mephenytoin is a substrate of the cytochrome P450 (CYP) isoform CYP2C19, also known as mephenytoin 4-hydroxylase. CYP2C19 metabolizes a variety of therapeutic agents, including omeprazole, proguanil, diazepam, propranolol, citalopram, imipramine, and certain barbiturates. Genetic defects in CYP2C19 result in poor metabolism of these compounds, and (S)-mephenytoin can be used to screen for such mutations by assaying its metabolites in urine.

References