Trimethoprim

CAS Registry No.: 738-70-5
Formal Name: 5-[(3,4,5-trimethoxyphenyl)methyl]-
2,4-pyrimidinediamine
Synonyms: NIH 204, NSC 106568
MF: C₂₁H₁₈N₄O₃
FW: 290.3
Purity: ≥98%
UV/Vis.: λ_max: 287 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

Trimethoprim is supplied as a crystalline solid. A stock solution may be made by dissolving the trimethoprim in the solvent of choice. Trimethoprim is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of trimethoprim in these solvents is approximately 20 and 13 mg/ml, respectively.

Trimethoprim is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, trimethoprim should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Trimethoprim 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

Trimethoprim is a synthetic antibiotic that inhibits dihydrofolate reductase (DHFR), which is necessary for the synthesis of purines, amino acids, and thymidylic acid.¹,² Trimethoprim shows prominent selectivity for bacterial DHFR over mammalian DHFR (IC₅₀s = 5 and 30,000 nM, respectively).² Formulations containing trimethoprim, commonly used in combination with sulfamethoxazole to minimize acquired resistance, have been used in the treatment of urinary tract infections.

References