Simultaneous determination of ampicillin, cefoperazone and sulbactam in pharmaceutical injections by HPLC with b-cyclodextrin stationary phase

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摘要

Abstract

An accurate and reproducible method for the simultaneous determination of ampicillin (AMP), sulbactam (SUL), and cefoperazone (CFP) in pharmaceutical formulations by using HPLC with P-CD stationary phase was developed. It involved the use of the added tetraethylammonium acetate (TEAA) reagent, pH, and methanol as the significant parameters to find the optimum separation condition. A high resolution and selectivity of analytes was obtained by running the mobile phase in methanol 5 mM TEAA buffer = 35:65 (v/v, pH 4.5) at 280 nm. The mean recoveries ranged from 96.6 to 103.3% for AMP in the synthetic mixture, 97.6 to 103.0% for SUL, and 97.0 to 104.0% for CFP. The low LOD (< 1.8 mu g/mL) and low CV (< 0.9%) assured that this method was sensitive and reproducible. The assay of analytes in commercial products exhibited that it was convenient and reproducible for routine analyses of these components in sterilized H2O, saline, or 5% dextrose injection solutions.