

KINETIC SPECTROPHOTOMETRIC DETERMINATION OF CEFADROXIL BY COUPLE CONJUGATED PEROXOACIDIC OXYDATION AND PERHYDROLYSIS REACTIONS PRODUCT

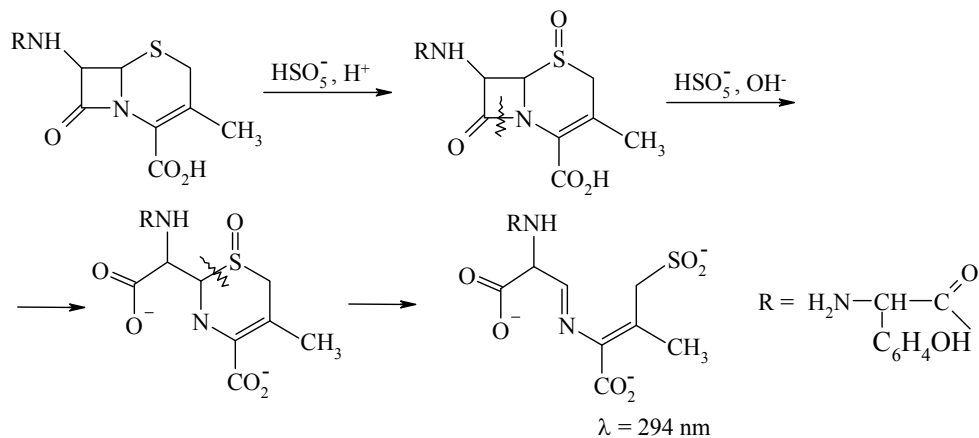
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Cefadroxil is chemically designated as 7-[[2-amino-2-(4-hydroxyphenyl)acetyl]amino]-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid is a derivate of 7-aminodezacetoxyccephalosporin acid (7-ADCA). It is an antibiotic remedy – semisynthetic first-generation cephalosporin β -lactam antibiotic of a wide range of application. Like all β -lactam antibiotics, cefadroxil binds to specific penicillin-binding proteins located inside the bacterial cell wall, disrupting the last stage of bacterial cell wall synthesis. It is produced in the form of capsules, 0.5 and powder for suspension preparation.

The aim of investigation is to observe new procedure of cefadroxil pure substance and capsules quantitative determination by kinetic spectrophotometric method by the product of two conjugated reactions of peroxoacidic oxidation and perhydrolysis in alkali medium using potassium hydrogenperoxomonosulphate as analytical reagent (KHSO_5). Chemical transformation is given on the scheme:



Advantages of the given procedure are high sensitiveness, precision and reliability of the results, the absence of expensive device, toxic solvents and special facilities as in HPLC method, simple and rapid in application. Linear concentration ranges varied from 0.9-7.3 $\mu\text{m mL}^{-1}$. Limit of detection is 0.91 $\mu\text{m mL}^{-1}$. For cefadroxil pure substance $RSD=2.03\%$ (accuracy $\delta=-0.23\%$), for capsules $RSD=2.98\%$ ($\delta=-0.42\%$).