

IODOMETRIC DETERMINATION OF CEFEPIME IN THE REACTION WITH POTASSIUM HYDROGENPEROXYMONOSULFATE

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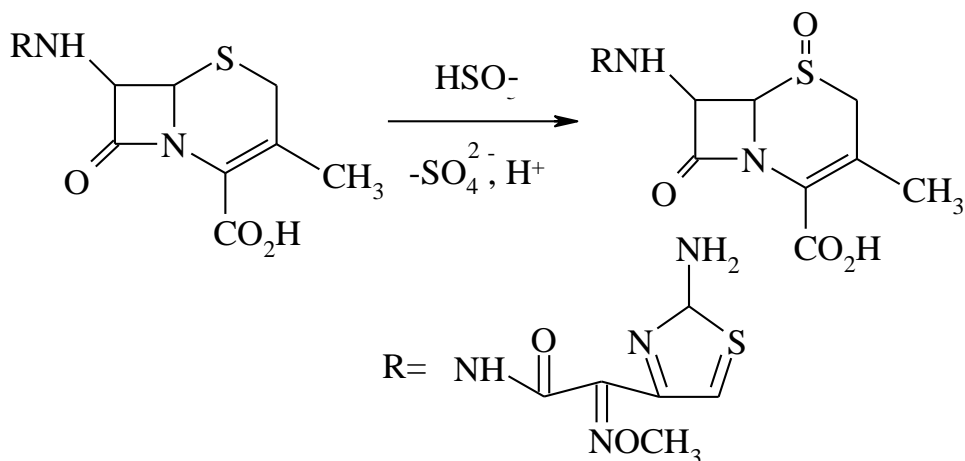
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Introduction. Cefepime is a fourth-generation cephalosporin antibiotic. Cefepime has an extended spectrum of activity against Gram-positive and Gram-negative bacteria, with greater activity against both types of organism than third-generation agents. For the Cefepime assay State Pharmacopoeia of Ukraine (SPU) recommends to use the method of HPLC.

Aim. The development of a new procedure of quantitative determination of Cefepime content in pure substance and medical preparation by the oxidimetric method using potassium hydrogenperoxomonosulfate as analytical reagent was proposed.

Materials and methods. *Cefepime* pure substance and medical preparation (SPU requirements) were used. As oxidant potassium hydrogenperoxomonosulfate ($2\text{KHSO}_5 \cdot \text{KHSO}_4 \cdot \text{K}_2\text{SO}_4$), Acros Organics (Oxon) was used. The choice of the reagent was determined by its rather high oxidative activity, $E_0 = 1.84 \text{ V}$, availability, and satisfactory solubility in water.

Results and discussion. The proposed method is based on quantitative S-oxidation reactions of Cefepime by potassium hydrogenperoxomonosulfate in an acidic medium. The excess of oxidant-reagent was determined by iodometric titration.



The time of stoichiometric interaction does not exceed 1 min. The limit of detection is 0.02 mg mL^{-1} . For Cefepime pure substance $\text{RSD}=1.67 \%$ (accuracy $\delta=1.02 \%$), for powder for injections $\text{RSD}=2.65 \%$ (accuracy $\delta=-0.17 \%$).

Conclusions. Cefepime S-oxidation reaction by means of potassium hydrogenperoxomonosulfate can be applied into analytical practice. The proposed method is high sensitivity, precision and reliable. The absence of expensive device, toxic solvents and special facilities as in HPLC method are the advantages of the procedure. It is simple and rapid in application.