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New Spectrophotometric method for the Determination of Chloramphenicol in Pharmaceutical Preparations Based on Schiff Base Reaction with P Dimethylamino benzaldehyde as Reagent

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Abstract: A new simple, rapid, sensitive, selective, and accurate method for the spectrophotometric determination of Chloramphenicol (CAP) in different pharmaceutical preparations. Chloramphenicol **as** active antibiotic is widely used in the treatment the diseases. The spectrophotometric method is based on the reaction between CAP and p-Dimethylamino benzaldehyde (PDAB) as reagent to formed a yellow Schiff base compound after reducing nitro group in drug into amino group by used a concentrated HCl and zinc dust. yellow compound was shown a maximum absorption at 436.5nm.Beers law was obeyed in the concentration rangeof 0.1-12µg.mL^{-1} with a molar absorptivity (1.79×10^{4})L.mol^{-1}.cm^{-1}, and sandell's sensitivity (1.8×10^{-2})µg.cm^{-2}, respectively. The analytical parameters were optimized as the fallowing: The best temperature is (1-60 °C), the reaction completed directly with addition PDAB to drug and the best volume of PDAB solutionis3.5mL. Limit of detection (LOD),and limit of quantification (LOQ)are0.037ppm,and0.124ppm, respectively, there coveries range 98.02%-100.6%. The method was successfully applied to the analysis of the(CAP) inits pharmaceutical preparations (Eye drops ,Ointments and Capsules).

Key words: Drugs, Chloramphenicol(CAP) , p-Dimethylaminobenzaldehyde (PDAB),Schiff base , Pharmaceutical preparation

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