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DEVELOPMENT AND VALIDATION OF SIMULTANEOUS SPECTROPHOTOMETRIC ESTIMATION OF CIPROFLOXACIN HYDROCHLORIDE AND DEXAMETHASONE SODIUM PHOSPHATE IN BULK DRUG AND ITS FORMULATION

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ABSTRACT

Simple UV-Spectrophotometric methods have been developed for simultaneous determination of Ciprofloxacin hydrochloride and Dexamethasone sodium phosphate in pharmaceutical formulation. Distilled water was used as a solvent for analysis. The methods used are simple and have been tested for accuracy, precision and reproducibility for the estimation of both the drugs. One method used is Simultaneous equation, wavelength selected for quantitation are 271 nm for Ciprofloxacin hydrochloride and 242 nm for Dexamethasone sodium phosphate. The other method used is Multicomponent mode of analysis, involves measurement of absorbance at two wavelengths i.e. 242 nm of Dexamethasone sodium phosphate and 271 nm of Ciprofloxacin hydrochloride. In both methods, Dexamethasone sodium phosphate and Ciprofloxacin hydrochloride followed linearity range at 2-20 µg/ml and 6-60 µg/ml respectively at their respective λ_{max} . The developed methods were economical in terms of time taken and amount of solvent consumed for analysis. The methods were validated and successfully applied for simultaneous determination Ciprofloxacin hydrochloride and Dexamethasone sodium phosphate in bulk drug and its formulation.

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