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NOVEL METHOD FOR SIMULTANEOUS ESTIMATION OF CIPROFLOXACIN HYDROCHLORIDE AND OFLOXACIN BY REVERSE PHASE-HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (RP-HPLC)

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ABSTRACT

A novel method was developed for the determination of fluoroquinolones such as ciprofloxacin hydrochloride (CPL) and ofloxacin (OFX) by isocratic reverse phase-high performance liquid chromatography (RP-HPLC) coupled with UV detection. The developed method was rapid, accurate, reproducible, economical and sensitive for the simultaneous estimation of ciprofloxacin hydrochloride and ofloxacin. Fluoroquinolone antibiotics were separated on an analytical column (SIL 100Å, 125×4.6 mm ID) C_{18}-RP, 5 µm, at ambient temperature. The mobile phase was consisted of Phosphate Buffer (15 mM): Methanol: Acetonitrile: TEA (66:24:10:1% v/v), pH was 6.5 (adjusted with 80% HCl), at a flow rate 1ml/min and sample injection volume was 20-µL. UV detection at 289 nm and retention time (RT) was 3.01 and 6.03min for ciprofloxacin hydrochloride and ofloxacin respectively. The method was validated in terms of stabilizing accuracy, precision (Intra/Inter-day), linearity, specificity, stability and sensitivity. The proposed method has been successfully applied for the analysis of marketed tablets and can be used for the routine analysis of formulations containing any one of the above drugs without any alteration in the assay. The main advantage of this method is the common chromatographic conditions adopted for both formulations and less time consuming.