



RESEARCH ARTICLE

SIMULTANEOUS DETERMINATION OF OFLOXACIN AND CEFIXIME IN COMBINED TABLET DOSAGE FORM BY HPLC AND ABSORBANCE CORRECTION METHOD

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High performance liquid chromatography and absorbance correction methods were developed and applied for the simultaneous determination of ofloxacin and cefixime. Chromatographic separation was achieved on reversed-phase C18 column(25 cm × 4.6 mm id, 5 μm) in the isocratic mode using methanol-water-triethylamine (25:75:1.5, v/v/v), pH adjusted to 3.50 ± 0.05 with orthophosphoric acid as the mobile phase at a flow rate 0.9 ml/min. Quantitation was achieved with UV detection at 254 nm. In the proposed HPLC method, quantification was achieved over the concentration range of 5-30 and 5-30 μg/ml, with mean recoveries of 99.95±1.31 and 100.36±1.24% for ofloxacin and cefixime respectively. In the absorbance correction method, quantification was achieved over the concentration range of 5-25 μg/ml for both drugs, with mean recoveries of 101.23±0.85 and 100.53±1.40% for ofloxacin and cefixime respectively. Determination was performed at 262.5 and 345.5 nm for ofloxacin and cefixime. The proposed methods were successfully applied for the analysis of synthetic mixtures and pharmaceutical formulations of ofloxacin and cefixime without any interference from common excipients. The results obtained by applying the proposed methods were statistically compared by the Student's t-test.

Key words: Ofloxacin, Cefixime, Liquid chromatography, Absorbance correction method.

INTRODUCTION

Ofloxacin (OFX) chemically is (±)-9-fluoro-2,3-dihydro-3-methyl-10-(4-methyl-1-piprazinyl)-7-oxo-7H-pyrido [1,2,3-de] -1,4-benzoxazine-6-carboxylic acid. It is a broad spectrum antibacterial agent, belonging to the group of fluoroquinolones. Ofloxacin is active against a wide variety of gram-positive and gram-negative organism. It is used in the treatment of urinary tract infection, conjunctivitis, gonorrhoea, respiratory tract infection and skin infection. Cefixime (CEFI) chemically(6R,7R)-7-[2-(2-amino-4-thiazolyl) glyoxylamido]-8-oxo-3-vinyl-

5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid-7-(Z)-[O-carboxymethyl]oxime] trihydrate. Cefixime is an oral third generation cephalosporin antibiotic. It is used to treat gonorrhoea, tonsillitis, pharyngitis, urinary tract infection and acute bronchitis (Moffat *et al* 2004; Hardman and Limbird, 2006).

HPLC has been remained as a method of choice for determination of drugs alone or in combination with other drugs in the pharmaceutical formulations (Bhimavarapu *et al* 2011; Basaveswara Rao *et al* 2012a; 2012b; Chhabra and Banerjee, 2013). Literature survey