

Simple Extraction and Determination of Ofloxacin in Human Plasma by High – Performance Liquid Chromatography with Fluorescence Detector

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ABSTRACT

A specific, selective, sensitive and precise reversed-phase high-performance liquid chromatographic method has been developed for the determination of ofloxacin in human plasma. Pipemidic acid was used as an internal standard. The simple extraction method using protein precipitation with acetonitrile was employed for sample preparation. Good chromatographic separation was achieved by using ODS hypersil (5 μ m, 250 x 4.0 mm) column and a mobile phase consisting of Acetonitrile : 25 mM Phosphoric acid + 2.5 mM N-Cetyl-N,N,N-trimethylammonium bromide (CTAB) pH=7.0 (20: 80) at a flow rate of 1.2 ml/min. Ofloxacin and pipemidic acid were detected with fluorescence detector at Ex = 285 nm, Em = 460 nm. No endogenous substances were found to interfere. Linearity range for ofloxacin was 25–4000 ng/ml. The coefficients of variation (%CV) for intraday and interday precision were less than 4.9 and 3.7% respectively, at all concentration levels while the intraday and interday accuracy ranged from 93.8–101.2 % at all concentration levels. This analysis method was successfully used in pharmacokinetic and bioequivalence study of ofloxacin in healthy volunteers.

Key words: Ofloxacin, Plasma analysis, HPLC, Determination, Pharmacokinetic

INTRODUCTION

Ofloxacin, a synthetic fluoroquinolone anti-infective agent has an expanded spectrum of activity and increased antibacterial potency compared with nonfluorinated quinolones (McEvoy, 2005).

Ofloxacin is used orally or IV in adults for the treatment of mild to moderate urinary tract infections, prostatitis, lower respiratory tract infection and skin structure infections caused by susceptible gram-negative and -positive aerobic bacteria. In addition, the drug is used in the treatment of acute, uncomplicated gonorrhoea, disseminated gonococcal infections, nongonococcal urethritis and cervicitis caused by susceptible *Chlamydia*, mixed infection of urethra and cervix