ABSTRAK

Levofloxacin adalah antibiotik golongan fluorokuinolon yang aktif terhadap bakteri gram positif dan bakteri gram negatif dengan menghambat enzim DNA gyrase, topoisomerase tipe II dan topoisomerase IV. Penelitian ini bertujuan untuk memvalidasi metode analisis senyawa levofloxacin dalam sediaan tablet. Kondisi optimum KCKT diperoleh menggunakan kolom C_{18} (5 μm 150 x 4,6 mm) pada perbandingan komposisi fase gerak buffer fosfat : acetonitril (70:30, v/v), laju alir sebesar 1,0 mL/menit, volume injeksi sebesar 15 μL, panjang gelombang 288 nm dan dihasilkan waktu retensi kurang dari 2,5 menit. Kurva kalibrasi linear diperoleh pada rentang konsentrasi 10-50 ppm dengan nilai koefisien determinasi (r^2) sebesar 0,998. Batas deteksi (LOD) yang didapat sebesar 2,08 ppm dan batas kuantifikasi (LOQ) sebesar 6,95 ppm. Standar deviasi (SD) diperoleh sebesar 0,35, koefisien variasi (KV) sebesar 0,87 % dan HORRAT sebesar 0,08. Nilai % recovery sebesar 101,24 % dan nilai selektivitas sebesar 1,42. Hasil yang diperoleh digunakan untuk menentukan kadar ofloxacin dalam sediaan tablet dan dihasilkan nilai % (*recovery*) sebesar 95,23%. Metode KCKT ini valid, akurat dan memiliki waktu analisis singkat.

Kata kunci : KCKT, levofloxacin, antibiotik, validasi metode

ABSTRACT

Levofloxacin is a fluoroquinolone antibiotic that is active against gram positive and gram negative bacteria by inhibiting DNA gyrase enzyme, topoisomerase type II and topoisomerase IV. The aim of this research was to validated the analysis method of levofloxacin in tablet formulations. The optimum condition of KCKT was achieved using C_{18} column (5 µm 150 x 4.6 mm) with ratio of the mobile phase composition containing phosphate buffer : acetonitrile (70:30, v/v), flow rate 1,0 mL / minute, injection volume 15 µL, wavelength at 288 nm and analysis time is less than 2,5 minutes. The calibration graph was linear in the range 10 to 50 ppm with determination value (r^2) of 0.998. The limit of detection (LOD) obtained was 2.08 ppm and the limit of quantification (LOQ) was 6.95 ppm. Standard deviation (SD) obtained was 0,35, coefficient of variation (KV) was 0,87% and HORRAT was 0,08. The value of % recovery was 101,24% and selectivity 1,42. The results obtained were used to determine ofloxacin levels in tablet formulations and the result of % recovery value was 95,23%. The HPLC method was valid, accurate and provided short analysis time.

Keywords : KCKT, levofloxacin, antibiotic, validation method