ABSTRAK

Pada penelitian ini telah dilakukan pengembangan metode penentuan kadar parasetamol dan kafein dalam obat dengan KCKT menggunakan fasa gerak KH_2PO_4-metanol-asetonitril-isopropil alkohol (42 : 2: 3: 3), laju alir 1 mL/menit, detektor UV panjang gelombang 215 nm dan kolom $C_{18,}$ yang dilakukan secara simultan. Uji validasi metode analisis kadar parasetamol dan kafein dalam tablet obat dengan KCKT dilakukan untuk memperoleh data validasi metode sehingga metode tersebut diketahui kelayakannya. Parameter-parameter validasi yang diuji meliputi linearitas, limit deteksi, limit kuantitasi, presisi, dan akurasi. Hasil yang diperoleh memiliki nilai waktu retensi lebih cepat daripada teknik simultan sebelumnya dengan menggunakan kolom C_8. Semua parameter yang diuji memenuhi kriteria penerimaan yang telah ditetapkan oleh *Association of Official Analytical Chemists*. Untuk parasetamol mempunyai nilai koefisien korelasi (r) = 0,9997, limit deteksi 17,5867 mg/L, limit kuantitasi 53,2932 mg/L, presisi luas area 0,96% serta presisi konsentrasi analit 1,03% dan akurasi dengan persen perolehan kembali berkisar 100,22-102,36%. Sedangkan kafein mempunyai nilai koefisien korelasi (r) = 0,9999, limit deteksi 0,7567 mg/L, limit kuantitasi 2,2932 mg/L, presisi luas area 0,99% serta presisi konsentrasi analit 1,01% dan akurasi dengan persen perolehan kembali berkisar 90,03-92,98%.

Kata kunci : validasi, KCKT, parasetamol, kafein.

ABSTRACT

This research has been developing methods for simultaneous determination of paracetamol and caffeine in drugs by HPLC, the mobile phase composition was KH_2PO_4- methanol-acetonitrile-isopropyl alcohol (42: 2: 3: 3), flow rate 1 mL / min, wavelength of the UV detector was 215 nm and C18 columns. Method Validation analysis of paracetamol and caffeine in tablets by HPLC conducted to obtaining data of validation method so that the method is known to feasibility. The Parameters of Validation tested include linearity, limit of detection, limit of quantitation, precision, and accuracy. The results obtained have time retention faster than the previous technique of simultaneously using C8 column. All Parameters are tested according the acceptance criteria established by the Association of Official Analytical Chemists. For paracetamol has a correlation coefficient (r) = 0.9997, limit of detection was 17.5867 mg / L, limit of quantitation was 53.2932 mg / L, precision of peak area was 0.96% and precision of concentration analyte was 1.03% and accuracy with %RSD ranged from 100.22 to 102.36%. While caffeine has a correlation coefficient (r) = 0.9999, limit of detection was 0.7567 mg / L, limit of quantitation was 2.2932 mg / L, precision of peak area was 0,99% and precision of concentration analyte was 1,01% and accuracy with %RSD ranged from 190,03-92,98%.

Keywords: validation, HPLC, paracetamol, caffeine.