

PENETAPAN KADAR RIFAMPISIN DAN ISONIAZID PADA TABLET KOMBINASI
DENGAN METODE KLT VIDEO DENSITOMETRI

ABSTRAK

Rifampisin dan Isoniazid contoh obat yang tersedia diperdagangan dalam bentuk kombinasi campuran, kedua zat aktif tersebut mempunyai efek antituberculosis. Sediaan obat dengan beberapa kombinasi zat aktif yang tidak memenuhi syarat terapi rasional dan tidak tepat sasaran, dapat membahayakan konsumen. Maka dibutuhkan analisis penetapan kadar menggunakan metode kimia sederhana, murah dan akurat salah satu contohnya yaitu KLT Video Densitometri. Tujuan penelitian ini mengembangkan metode KLT video densitometri dalam penetapan kadar Rifampisin dan Isoniazid pada sediaan tablet kombinasi. Penelitian meliputi uji selektivitas menggunakan fase diam plat silika gel GF254 dan fase gerak campuran Methanol:Ammonia (10:1) validasi metode analisis dan penetapan kadar pada sampel. Visualisasi dan perekaman bercak dilakukan dibawah sinar UV 254nm menggunakan alat video densitometri dan pengukuran luas dibawah kurva (AUC) dari gambar bercak menggunakan software ImageJ. Penotolan dilakukan dengan Camage. Hasil Rf pada uji selektivitas diperoleh Rifampisin 0,78 dan Isoniazid 0,66. Persamaan kurva kalibrasi untuk Rifampisin $Y = 43,454x - 5626,8$ dan untuk Isoniazid $Y = 11,938x + 2214,1$. Hasil penetapan kaadar Rifampisin dan Isoniazid dalam sediaan tablet kombinasi untuk Rifampisin , 98,85%, 98,95% dan 98,40% sedangkan untuk Isoniazid 98,14%, 99,30% dan 99,15%. Hasil yang didapatkan memenuhi syarat parameter validasi yang sudah ditetapkan sehingga metode KLT video densitometri dapat digunakan untuk penetapan kadar Rifampisin dan Isoniazid.

KataKunci : Rifampisin, Isoniazid, KLT Video Densitometri

*DETERMINATION OF RIFAMPICIN AND ISONIAZID LEVELS IN COMBINATION
TABLETS USING THE DENSITOMETRY VIDEO TLC METHOD*

ABSTRACT

Rifampicin and Isoniazid are examples of drugs that are available traded in the form of a mixed combination, the two active substances have antituberculosis effects. Drug preparations with several combinations of active substances that do not meet the requirements for rational therapy and are not on target can harm consumers. So it is necessary to analyze the determination of levels using a chemical method that is simple, cheap and accurate, one example is TLC Video Densitometry. The aim of this study was to develop a video densitometry TLC method for determining Rifampicin and Isoniazid levels in combination tablet preparations. The study included selectivity tests using silica gel plate GF254 stationary phase and a mixture of Methanol:Ammonia (10:1) mobile phase validating the analytical method and determining the concentration of the sample. Visualization and recording of the spots was carried out under 254nm UV light using a video densitometry tool and measuring the area under the curve (AUC) of the spot images using ImageJ software. The shooting was done with Camage. The R_f results in the selectivity test were obtained for Rifampicin 0.78 and Isoniazid 0.66. The calibration curve equation for Rifampicin $Y = 43.454x - 5626.8$ and for Isoniazid $Y = 11.938x + 2214.1$. The results of determining the levels of Rifampicin and Isoniazid in combination tablet preparations for Rifampicin, 82.42%, 82.46% and 82.43% while for Isoniazid were 78.47%, 78.46% and 78.00%. The results obtained met the validation parameter requirements that had been set so that the video densitometry TLC method could be used to determine Rifampicin and Isoniazid levels.

Keywords: Rifampicin, Isoniazid, Densitometry Video TLC