

ABSTRACT

A simple, rapid, sensitive, specific, accurate, precise and fast high performance liquid chromatographic method for the determination of antihypertensive drugs amlodipine, valsartan and hydrochlorothiazide singly or in combination was developed and validated. Separation of the analytes was achieved on a Hypersil C-18 (250 mm × 4.6 mm, 5 μm) column using a mobile phase consisting of acetonitrile-KH₂PO₄ pH 3.0-water (75:6:19 % v/v/v) delivered at 1 ml/min, UV detection at 229 nm and 40 °C column temperature. The precision of the method was demonstrated through repeatability (coefficient of variation = 0.298-0.724) as well as intermediate precision (coefficient of variation = 0.435-1.412). The detector response was linear over the 25-150 % range with $R^2 \geq 0.99$ for each of the three analytes. The limit of detection for hydrochlorothiazide, valsartan and amlodipine were 10.72, 21.20 and 14.45 ng, while the limits of quantification were 35.76, 71.23 and 48.16 ng, respectively. The method showed satisfactory robustness and accuracy with a recovery of 99.7-100.6 %. The method was applied in the assay of 6 commercial products containing drugs under study. The results obtained revealed quality problems among the samples analyzed.