ABSTRACT

A RP-HPLC and UV-visible spectrophotometric for simultaneous estimation of Paracetamol and Etoricoxib in marketed tablet formulation were developed and validated.

A RP-HPLC method was developed for simultaneous estimation of Paracetamol and Etoricoxib tablet formulation using Phenomenex Luna C_{18} column (250 mm × 4.6 mm id, 5 µm particle size) and a mobile phase of methanol : water (70:30 v/v), at flow rate 1.0 ml/min with UV detection at 235 nm. The retention time (t_R) of Paracetamol and Etoricoxib found to be 3.04 and 5.63 min respectively. The proposed method was validated for system suitability, specificity, linearity, accuracy, precision, LOD, LOQ and robustness. All parameters were found to be within the acceptance limit. Linearity over the concentration range 5-30 µg/ml for both Paracetamol and Etoricoxib with regression coefficient (r^2) 0.9998 and 0.9994 respectively. Limit of detection (LOD) found to be 0.10 µg/ml and 0.04 µg/ml whereas limit of quantitation (LOQ) found to be 0.33 µg/ml and 0.13 µg/ml for Paracetamol and Etoricoxib respectively. The accuracy of the proposed method was determined by recovery studies and found to be 99.74%-101.25% and 99.08%-99.21% for Paracetamol and Etoricoxib respectively.

A UV-visible spectrophotometric method was developed for simultaneous estimation of Paracetamol and Etoricoxib in marketed tablet formulation using acetonitrile as solvent. The method involved Q-absorbance ratio method based on the measurement of absorbance at two wavelengths, i.e. λmax of Paracetamol (247 nm) and iso-absorptive point of both drugs (264.5 nm). Linearity found over the concentration range of 2-10 µg/ml for both Paracetamol and Etoricoxib with regression coefficient (r^2) 0.9991 and

0.9966 respectively at 247 nm and 0.999 at 264.5 nm. LOQ for Paracetamol and Etoricoxib found to be 0.091 µg/ml and 0.37 µg/ml at 247 nm respectively and 0.253 at 264.5 nm whereas LOD found to be 0.030 µg/ml and 0.12 µg/ml at 247 nm respectively and 0.083 at 264.5 nm. The proposed method was validated for linearity, accuracy, precision, LOD and LOQ. All parameters were found to be within the acceptance limit. The accuracy of the proposed method was determined by recovery studies and found to be 99.66%-102.8% and 100.13%-101.8% for Paracetamol and Etoricoxib respectively.

The proposed methods are simple, accurate, precise and suitable for analysis of marketed tablet formulation containing Paracetamol Etoricoxib.