ABSTRACT

Developed HPLC and UV methods for simultaneous estimation of Aceclofenac (ACO), Paracetamol (PCM) and Tizanidine (TZN) in tablet formulation and validated.

A HPLC method was developed by using Phenomenex-Luna C_{18} (250x4.6 mm ID, 5 µm) with a mobile phase containing methanol: water (90:10 v/v), flow rate 1 ml/min and wavelength at 256 nm. The proposed method was validated for linearity, accuracy, precision, LOD, LOQ. Linearity, accuracy and precision were found to be well within the acceptance limit. Linearity observed over the concentration range between 5-30 µg/ml, 10-60 µg/ml and 2-12 µg/ml for Aceclofenac, Paracetamol and Tizanidine respectively. The accuracy of the proposed method was determined by recovery studies and found to be 100.4-101.53%, 100.3-100.8% and 99.6-99.75 % for Aceclofenac, Paracetamol and Tizanidine. The proposed method was extended for estimation of Aceclofenac, Paracetamol and Tizanidine in marketed tablet formulation and assay values conformed to the label claim of the marketed tablet formulation.

A simple and sensitive UV method was developed and validated by using acetonitrile as a solvent. The method was developed with help of derivative spectrophotometry method with simultaneous equation method and absorbance were measured at 277 nm, 248 nm and 323 nm being the zero crossing points for Aceclofenac Paracetamol and Tizanidine respectively. Linearity observed over the concentration range between 5-30 µg/ml, 2-16 µg/ml and 2-12 µg/ml for Aceclofenac, Paracetamol and Tizanidine respectively. The reliability and the efficiency of the proposed method are confirmed by recovery studies

and found to be 98.6-101.2% for Aceclofenac, 98.5-101.6% for Paracetamol and 98.5-101.6% for Tizanidine. The proposed method was extended for estimation of Aceclofenac, Paracetamol and Tizanidine in marketed tablet formulation and it was found to be well within the acceptance limit. These developed and validated HPLC and UV methods can be used for routine analysis of Aceclofenac, Paracetamol and Tizanidine in tablets.