ABSTRACT

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

A RP-HPLC method was developed for simultaneous estimation of Diacerein and Glucosamine tablet formulation using Phenomenex Luna C_{18} column (250 × 4.6 mm i.d., 5 µm particle size) and a mobile phase of acetonitrile: o-phosphoric acid solution (0.001 % v/v) in HPLC water pH 4 (40:60 v/v), at flow rate 1.0 ml/min with UV detection at 220 nm. The retention time (t_R) of Diacerein and Glucosamine found to be 15.449 and 1.996 min respectively. 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 over the concentration range found to be 5-25 µg/ml for Diacerein and 100-500 µg/ml for Glucosamine with regression coefficient (r^2) 0.9994 and 0.9992 respectively. Limit of detection found to be 0.52 and 0.16 µg/ml whereas limit of quantition found to be 1.6 and 0.509 µg/ml for Diacerein and Glucosamine respectively. Precision calculated by % RSD for Diacerein 0.15-1.5 and Glucosamine 0.02-0.8 %. The accuracy of the proposed method was determined by recovery studies and found to be 99.25-99.98 and 99.47-100.51 % Diacerein and Glucosamine respectively.

A UV-visible spectrophotometric method was developed for simultaneous estimation of Diacerein and Glucosamine in marketed tablet formulation using HPLC methanol as solvent. The proposed method was developed by simultaneous equation method and absorbencies were measured at wavelength 257 nm for Diacerein and 202 nm for Glucosamine. Linearity over the concentration range found to be 2-10 and 25-100 µg/ml respectively with regression coefficient (r^2) 0.9991 and 0.9993 respectively. LOD found to be 0.025 and 1.031µg/ml respectively whereas LOQ found to be 0.076 and 3.125

µg/ml for Diacerein and Glucosamine respectively. Precision calculated by % RSD for Diacerein 0.21-1.2 and Glucosamine 0.8-1.23 %. The accuracy of the proposed method was determined by recovery studies and found to be 102.66-110.19 and 102.16-102.89 % for Diacerein and Glucosamine respectively.

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