Abstract

The purpose of this study was to develop a new high performance liquid chromatographic method for determination of ACE Inhibitors in pharmaceutical formulations. In the present study a rapid, simple, economical, reverse phase HPLC-PDA method was developed, optimized and validated. The HPLC method was developed and optimised using Design Expert™ (Version 8.0.6, StatEase Inc. USA) software using central-composite design, after studying the physicochemical properties. The Optimised mobile phase was 58% buffer (0.005M KH₂PO₄, 0.25mL TEA/L), 25% acetonitrile and 17% methanol, final pH was adjusted to 2.80 ± 0.10 using orthophosphoric acid. The flow rate was 1.0 ml/min. The signals were monitored using PDA detector (set between λ 200-400 nm). Quantitation was carried out at 215 nm. The run time was less than 8 minutes.

The linearity of the developed method was ranged from 5-35 μg/ml for different drugs. LOD were 0.232, 0.345, 0.476, 0.026, 0.280, 0.609, and 0.141 μg/ml for lisinopril, hydrochlorothiazide (HCT), captopril, indapamide, perindopril and trandolapril respectively. Whereas LOQ were 0.702, 1.044, 1.443, 0.079, 0.848, 1.846 and 0.428 μg/ml for lisinopril, HCT, captopril, imidapril, indapamide, perindopril and trandolapril respectively. The intra- and inter-day precision (coefficient of variation) of the method was less than 2%, which indicates high precision result during the study. The accuracy of the method were ranged from 102.4-106.6, 99.5-103.5, 102.9-104.3, 97.0-99.0, 97.6-98.8, 97.0-99.6 and 97.0-98.6% for lisinopril, HCT, captopril, imidapril, indapamide, perindopril and trandolapril respectively.

In conclusion this method presented here is sensitive, rapid, accurate, precise, economic, robust, rugged and selective for the routine analysis of the drug in formulation and raw material without changing the chromatographic parameters for these drugs.

Simultaneous High Performance Liquid Chromatographic (HPLC) Determination of ACE Inhibitors in Pharmaceutical Formulations

by

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