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Development of solid phase extraction and HPLC method for simultaneous estimation Ilaprazole and Glimepiride in rat plasma: Application to pharmacokinetic studiesA P Dewani¹, A S Tripathi¹, P G Shelke¹, R L Bakal² and A V Chandewar¹¹Pataldhamal Wadhvani College of Pharmacy, India²KYDSCT'S College of Pharmacy, India

A novel, simple and MS compatible high-performance liquid chromatography (HPLC) method is reported for the simultaneous estimation of ilaprazole (ILA) and glimepiride (GLM) in rat plasma. The bio-analytical procedure involves extraction of ILA, GLM and internal standard (IS) from rat plasma with a solid phase extraction (SPE) process. The chromatographic analysis was performed on Waters-600 system using an isocratic mobile phase comprising methanol:water (80:20 % v/v) with pH of water modified to 3 using formic acid at a flow rate of 1.0 mL/min and Kinetex C₁₈ column maintained at 30±1 °C. The signals were monitored using a PDA detector set at 225 nm. IS, ilaprazole and glimepiride eluted at 2.04, 4.7 and 7.4 min respectively and the total run time was 10 min. Method validation was performed as per US Food and Drug Administration guidelines and the results met the acceptance criteria. The calibration curve was linear over a concentration range of 10-600 ng/mL (r₂=0.999). The intra- and inter-day precisions for ILA and GLM were (%RSD values) in the range of 1.52-9.74 and 1.52-11.76%, respectively, in rat plasma. The method was successfully applied in pharmacokinetic studies followed by oral administration of GLM and ILA in rats.

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