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Pharmacokinetic Monitoring of Glimepiride and Ilaprazole in Rat Plasma by High Performance Liquid Chromatography with Diode Array Detection

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Abstract : Present manuscript reports the development and validation of a quantitative high performance liquid chromatography method for the pharmacokinetic evaluation of Glimepiride (GLM) and Ilaprazole (ILA) in rat plasma. The plasma samples were involved with Solid phase extraction process (SPE). The analytes were resolved on a Phenomenex C18 column (4.6 mm× 250 mm; 5 µm particle size) using a isocratic elution mode comprising methanol:water (80:20 % v/v) with pH of water modified to 3 using Formic acid, the total run time was 10 min at 225 nm as common wavelength, the flow rate throughout was 1ml/min. The method was validated over the concentration range from 10 to 600 ng/mL for GLM and ILA, in rat plasma. Metformin (MET) was used as Internal Standard. Validation data demonstrated the method to be selective, sensitive, accurate and precise. The limit of detection was 1.54 and 4.08 and limit of quantification was 5.15 and 13.62 for GLM and ILA respectively, the method demonstrated excellent linearity with correlation coefficients (r2) 0.999. The intra and inter-day precision (RSD%) values were < 2.0% for both ILA and GLM. The method was successfully applied in pharmacokinetic studies followed by oral administration in rats.

Keywords : pharmacokinetics, glimepiride, ilaprazole, HPLC, SPE
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