



Determination of Sulpiride in Rabbit Plasma by LC-ESI-MS and its Application to a Pharmacokinetic Study

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SUMMARY. A sensitive and selective liquid chromatography-mass spectrometry (LC-MS) method for determination of sulpiride in rabbit plasma was developed and validated. The analyte and internal standard (IS) were extracted from plasma by liquid-liquid extraction using ethyl acetate, and chromatography involved Agilent Extend-C18 column (2.1 mm x 50 mm, 3.5 μ m) using 0.2 % formic acid in water and acetonitrile (60: 40, v/v) as a mobile phase. Detection involved positive ion mode electrospray ionization (ESI), and selective ion monitoring (SIM) mode was used for quantification of target fragment ions *m/z* 342.0 for sulpiride and *m/z* 294.8 for estazolam (internal standard, IS). The assay was linear over the range of 10–2000 ng/mL for sulpiride, with a lower limit of quantitation (LLOQ) of 10 ng/mL for sulpiride. Intra- and inter-day precisions were less than 12 % and the accuracies were in the range of 94.1-108.7 % for sulpiride. This developed method was successfully applied for the determination of sulpiride in rabbit plasma for pharmacokinetic study.

KEY WORDS: LC-MS, Sulpiride, Pharmacokinetics, Rabbit plasma.

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