



Gradient Elution LC-ESI-MS Determination of Cilostazol in Rat Plasma and its Application

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SUMMARY. A sensitive and simple liquid chromatography/electrospray mass spectrometry (LC-ESI-MS) method for determination of cilostazol in rat plasma using one-step protein precipitation was developed. After addition of midazolam as internal standard (IS), protein precipitation by acetonitrile was used as sample preparation. Chromatographic separation was achieved on an SB-C18 (2.1 × 50 mm, 5.0 μm) column with acetonitrile-0.1 % formic acid as mobile phase with gradient elution. Electrospray ionization (ESI) source was applied and operated in positive ion mode; selected ion monitoring (SIM) mode was used to quantification using target fragment ions *m/z* 370.0 for cilostazol and *m/z* 325.9 for the IS. Calibration plots were linear over the range of 10-2000 ng/mL for cilostazol in rat plasma. Lower limit of quantification (LLOQ) for cilostazol was 10 ng/mL. Mean recovery of cilostazol from plasma was in the range 90.14-95.10 %. RSD of intra-day and inter-day precision were both less than 15 %. This method is simple and sensitive enough to be used in pharmacokinetic research for determination of cilostazol in rat plasma.

KEY WORDS: Cilostazol, Gradient elution, LC-ESI-MS, Rat plasma.

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