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Determination of Escitalopram in Human Plasma by High Performance Liquid Chromatography-Tandem Mass Spectrometry

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SUMMARY. **A rapid (3.0 min) and sensitive (LLOQ 0.5 ng/mL) analytical method for the quantitation of Escitalopram (ETP) in human plasma is described. The method is based on High-Performance Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS) using paroxetine as internal standard (I.S.). Sample preparation involved precipitation extraction with acetonitrile. The chromatographic separation was achieved on a ACE C18 (125 x 4,6 mm) reversed-phase column and a mobile phase containing acetonitrile/water (60:50 v/v, add 0.2 % formic acid), in isocratic conditions. The target analytes were transferred into a triple quadrupole mass spectrometer equipped with an electrospray ionization source for mass detection. The ion transitions selected for MRM detection were: *m/z* 325.2 > 109.2 and 330.0 > 192.0 for ETP and I.S., respectively. The assay was linear in the concentration range of 0.5-50 ng/mL. The mean recovery for ETP was 97.69 %. Intra- and inter-day precision (R.S.D.) were < 10.5 % and <8.2 %, respectively and the accuracy (R.E.) was in the range ± 12.23 %. The method was successfully applied to a single oral dose pharmacokinetics study in 28 healthy Brazilian human volunteers.**

KEY WORDS: Brazilian volunteers, Escitalopram, LC-MS/MS, Pharmacokinetics, Validation.

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