

Simultaneous determination of amoxicillin and clavulanic acid in human plasma by liquid chromatography coupled with tandem mass spectrometry

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A simple, rapid, specific and sensitive liquid chromatography tandem mass spectrometric method has been developed and validated for the simultaneous determination of Amoxicillin and Clavulanic acid from 250 μ L of human plasma by Solid Phase Extraction. Hydrochlorothiazide was used as an internal standard. Quantified by the transition, 364.060 \rightarrow 223.160, 198.061 \rightarrow 136.000 for Amoxicillin and Clavulanic acid respectively and detected by TSQ Quantum Discovery max triple quadrupole mass spectrometer. Detection was carried out by using ESI source in negative polarity. Chromatographic separation of analyte and internal standard were carried out by reverse phase C18 column at the flow rate of 0.5mL/min with mobile phase of Acetonitrile: 2 mM Ammonium Acetate (70:30) v/v. The assay of Amoxicillin and Clavulanic Acid were linear over the range of 0.103 μ g/mL to 6.822 μ g/mL and 0.046 μ g/mL to 3.026 μ g/mL respectively. With a precision of \leq 9.43 % and \leq 11.75 % respectively, Mean extraction recovery obtained were 82.04% and 87.14% respectively. Samples were stable at room temperature for 6 hrs and also stable at three freeze-thaw cycle. The method has been used to perform pharmacokinetic and bioequivalence studies in human plasma.

Biography

Chaitanya Krishna Atmakuri is associated with Bombay Bio Research Centre as a Study Director from 2010. He has graduated (Pharmaceutical Sciences) from Andhra University and completed his post graduation in Pharmaceutical Technology Vinayaka Mission University. He is involved in conducting BA/BE research studies since 2004. Earlier he had worked for GVK Bio, CR Bio and Quest Life Sciences Pvt. Ltd., and worked at different levels in the field of Bioavailability and Bioequivalence.

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