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Bioanalysis of riluzole in human plasma by a sensitive LC-MS/MS method and its application to a pharmacokinetic study in South Indian subjects

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In this paper, the authors proposed a simple, rapid and highly sensitive liquid chromatography–tandem mass spectrometric (LC–MS/MS) assay method for the determination of riluzole in human plasma. Carbamazepine was used as an internal standard (IS). The method employed only 100 µL of human plasma for sample processing by simple protein precipitation technique. The processed samples were chromatographed on a C18 column by using a mixture of 0.1% formic acid – acetonitrile (30:70, v/v) as the mobile phase at a flow rate of 0.9 mL/min. The calibration curve obtained was linear over the concentration range of 0.10–500 ng/mL with $r^2 \geq 0.99$. Method validation was performed as per FDA guidelines and the results met the acceptance criteria. The multiple reaction–monitoring mode (MRM) was used for quantification of ion transitions at m/z 235.0/165.9 and 237.2/194.1 for the analyte and the IS, respectively. A run time of 2.0 min for each sample made it possible to analyze more than 400 plasma samples per day, thus increasing the productivity. The validated method was successfully applied to a clinical pharmacokinetic study in South Indian male Subjects under fasting condition with 50 mg riluzole tablet.

Biography

Anjaneyulu Narapusetti has completed his MPharm and Research Scholar, School of Pharmaceutical Sciences, Jawaharlal Nehru Technological University Kakinada. He is presently working as Associate Professor in Geethanjali College of Pharmacy, Cheeryal, Ranga Reddy, Telangana, India. He has published more than six papers in reputed journals.

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