

Bioanalytical method development and validation for bioflavonoid quercetin in nano formulation by RP-UFLC in rabbit plasma

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A sensitive reverse phase high pressure liquid chromatography (RP-HPLC) has been developed and validated for the quantification of quercetin in rabbit plasma using protein precipitation method (PPT). Best chromatographic resolution was achieved on a reverse phase Hibar C₁₈ (250 x 4.6 mm i.d., 5 μ) column with the mobile phase consisted of acetonitrile: ammonium acetate buffer (pH 3.5) in the ratio of 75:25 (v/v) with a flow rate of 0.8ml/min. The retention time for the drugs was found to be 5.6 minute and 10 minute for internal standard (fluticasone propionate). The analyte was detected by using a PDA detector with LC solution software. Linearity was obtained in the concentration range from (20 to 400.0 ng/ml) ($r = 0.989$). Lower limit of quantification (LLOQ) was found to be 10 ng/ml. Middle limit of quantification (MQC) was found to be 200 ng/ml and higher limit of quantification (HQC) was found to be 400 ng/ml. The average recovery of the analyte was found to ranging from 95.82 to 98.8%. The present method was successfully applied in the newly developed nano-formulation for estimation of various pharmacokinetic parameters such as peak plasma concentration (C_{max}), time to peak concentration (t_{max}), area under the plasma concentration-time curve (AUC_{0-t} & $AUC_{0-\infty}$), elimination rate constant (k_{el}) and elimination half-life ($t_{1/2}$) for quercetin in rabbit plasma.

Biography

Shanmugam R, pursuing Ph.D. under the guidance of Dr.K.Gowthamarajan, professor and Head, Department of Pharmaceutics, JSS College of Pharmacy, Udhagamandalam, striving to develop Biopharmaceutical classification system (BCS) for herbals. He finished his M.Pharmacy from JSS University, Mysore and B.Pharmacy from Dr. MGR Medical University, Chennai. This helps to fit the herbals in BCS just as synthetic moiety so that the profile of the herb can be estimated based on proper physicochemical standardization. To his credit he had 2 best poster awards, 32 paper presentations & 5 publications (international/national) and 1 patent.

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