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Development and validation of bioanalytical method for estimation of methoxsalen in human plasma

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In this study, an attempt was made to describe and validate a liquid chromatography coupled with tandem mass spectrometry method for the quantification of methoxsalen, an antipsoriatic agent in human EDTA K3 plasma according to the current bioanalytical guidelines. The internal standard used was methoxsalen D3. The separation was performed on a Symmetry, C18, 4.6X 150 mm, 5 µm column using a mobile phase of 2 mM ammonium acetate and methanol 15:85 (v/v) with a flow rate of 0.80 ml/min. The detection of methoxsalen and the internal standard was performed in multiple reactions monitoring (MRM) mode using LC/MS/MS Mass Spectrometer with electro spray ionization, operating in positive ion mode. The human plasma samples were extracted using liquid-liquid extraction with methyl tert-butyl ether. The method shows a good linearity ($R^2 > 0.98$), precision and accuracy over the range of 0.1-100 ng/ml methoxsalen in plasma. The recovery was between 93.85 and 105.25%. The limit of quantification was 0.1 ng/ml. The analysis required about 3.2 minutes run with retention time of drug 2.2 minutes. The proposed method was selective, sensitive, accurate and precise enough to be successfully applied to bioequivalence study.

Biography

S K Patel has completed her PhD from Ganpat University, Gujarat, India. She is an Assistant Professor in Quality Assurance Department, Shree S. K. Patel College of Pharmaceutical Education and Research, Ganpat University, Gujarat, India since last 10 years. She has published more than 37 papers in reputed national and international journals.

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