



Simultaneous Estimation of Drug Digoxin in Tablet Dosage Form by UV Spectrophotometric Method

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Abstract: Digoxin has a cardiac glycoside property. Aim of the present study was to develop UV - Spectrophotometric method using simultaneous equation for the drug Digoxin in tablet formulation. Objective of the study is to develop a simple and precise analytical method for the drug Digoxin with statistical data. In validation, our study includes accuracy, precision, specificity, limit of detection, limit of quantitation, linearity and range parameters. Digoxin has antihypertensive activity and various new tablet formulations were already introduced in the market, so we compared the results of marketed tablet formulation with standard drug Digoxin. Literature review helped us in planning of work that includes selection of solvent, wavelength identification, sample preparation, analyzing test & standard solutions and validation study. The detection of the drug was carried out in 220 nm. The method was linear (Correlation Coefficient = 0.99) over the range of 25 to 125 µg/ml, precise (Standard Deviation = 0.1, Relative Standard Deviation < 2%), accurate (mean recoveries from 97.5% and 104.3%), and had a LOD and LOQ equal to 0.12 and 0.38 µg/ml, respectively. For specific stability, the forced degradation study (alkali, acid, oxide and heat) was performed on marketed formulations to show the stability indicating ability of the developed method. The method showed robustness, remaining unaffected by deliberate variations in spectrophotometric conditions. Due to correlative results the validated analytical method was successfully applied for the quantification of Digoxin and demonstrated the uniform distribution of the drug into the systems. Finally, we developed an accurate, less time consuming and cheaper UV-Spectrophotometric method for the determination of the Digoxin in tablet formulation.

Keywords: Digoxin; UV-Spectrophotometric method; Simultaneous estimation method; Validation

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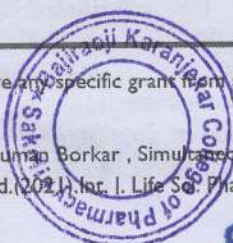
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