Hydrotropic Solubilizing Approach for Quantitative Estimation of Hydrochlorothiazide and Nebivolol Hydrochloride

Ruchi Jain*, Nilesh Jain and Surendra Kumar Jain

Sagar Institute of Research & Technology-Pharmacy, Bypass Road, Bhopal – 462 041, Tel: +919425184145; Email: jainruchi02@gmail.com

www.peertechz.com

Two simple, accurate, novel, safe and precise methods developed for the simultaneous estimation of poorly water-soluble drugs Hydrochlorothiazide and Nebivolol Hydrochloride in tablet dosage form using 2 M Citric acid as hydrotropic solution. It was found that solubility enhanced of HCZ and NEB was more than 46 and 49 fold respectively in hydrotropic solution as compare with distilled water. HCZ and NEB show maximum absorbances at 271.5 and 280 nm respectively. Citric acid solution did not show any absorbance above 240 nm. HCZ and NEB follows the Beer’s law in the concentration range of 5-25 μg/ml and 30-150 μg/ml ($r^2= 0.9999$ and 0.9987). Method-A simultaneous equation method employs 271.5 and 280 nm as two analytical wavelengths, method-B is absorption ratio method, which uses 275.4 and 280 nm as two analytical wavelengths were used for estimation of HCZ and NEB. The optimized methods showed good reproducibility and mean recovery with 98.71±0.877 and 99.29±0.99 in method A and 98.83±0.82 and 99.27±0.99 in method B for HCZ and NEB respectively. The mean percent label claims of tablet dosage were found to be 97.84±0.721 and 99.60±0.32 in method A, 99.28±0.982and 100.20±0.645 in method B for HCZ and NEB respectively. The standard deviation, coefficient of variance and standard error were obtained for HCZ and NEB was satisfactorily low. and therefore the both methods be able to used for routine monitoring of HCZ and TEL in industry in the assay of bulk drug and as well as tablets dosage form.