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Development of New UV Spectrophotometric Method For Estimation of Losartan Potasium in Bulk and Tablet Dosage Form

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ABSTRACT

A new, simple, specific, precise and accurate spectrophotometric method has been developed for determination of losartan potassium in bulk and tablet dosage form. The drug shows absorption maxima at 228 nm. The method was statistically validated according to I.C.H.Guidelines. Percentage mean recovery obtained was 99.62%; coefficient of variance was found to be less than 2% and linearity coefficient was 0.9995. Linear response obtained for losartan potassium was in the concentration range of 2-18 «g/ml. The limit of detection and limit of quantification for Losartan was found to be 0.086 «g/ml and 0.259 «g/ml, respectively.

Key words : Losartan Potassium, Spectrophotometric, Validation

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Losartan potassium is chemically 1H-imidazole-5-methanol, 2-butyl-4chloro-1-[[2'(1H-tetrazol-5-yl)-[1,1'-biphenyl]-4-yl] methyl]-, potassium salt[1]. It is a newer angiotensin II receptor (type AT1) antagonist[2] used in mild to moderate hypertension. The drug is not official in any pharmacopoeia. Several methods such as High Performance Liquid Chromatography (HPLC)[3,4,5,6] methods have been reported for the estimation of losartan potassium. In this communication, a new simple, specific, accurate spectroscopic method is reported for the determination of losartan potassium in bulk and tablet dosage form.

MATERIALS AND METHODS

Instrumentation:

A Systronics UV-visible spectrophotometer with 1 cm matched quartz cells was used for all absorbance measurements.

Reagents:

Sodium hydroxide AR grade was procured from Loba Chemie Ltd., Mumbai. Double distilled water was used for preparing 1N sodium hydroxide solution. Losartan Potassium used as API was gift sample from M/s Intas Pharmaceuticals Ltd., Matoda, Ahemdabad, India. Different brands of losartan potassium were procured from the local market.

Preparation of calibration curve:

Losartan potasium (10 mg) was accurately weighed and dissolved in 1N sodium hydroxide solution to prepare stock solution having concentration of 100 µg/ml. From this stock solution, working standard solution of drug was prepared by appropriate dilution.

Working standard solution was scanned in entire UV range to determine λ-max. The µ-max. for losartan potassium was found to be 228 nm. Standard solutions were prepared having concentration 2, 4, 6, 8, 10, 12, 14, 16 and 18 µg/ml using working standard solution. The absorbances of these standard solutions were measured at 228 nm and calibration curve was plotted at this wavelength-using 1N sodium hydroxide solution as blank.

Estimation of drugs from pharmaceutical dosage forms:

Twenty tablets of three different pharmaceutical companies were accurately weighed and powdered. The powder equivalent to 20 mg of losartan potassium was transferred into 100 ml volumetric flask, it was dissolved and diluted with 1N sodium hydroxide solution and filtered through Whatman Filter Paper No. 40. Further suitable dilutions were made with