Determination of Valsartan by Visible Spectrophotometry

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Abstract **- A simple and reproducible spectrophotometric method has been developed for the determination of Valsartan in bulk and pharmaceutical dosage forms. The method is based on the extraction of the drug into organic layer of the dye TPooo in presence of 0.1 N hydrochloric acid and the absorbances were measured at 483 nm. The method was optimized using eight parameters. The linearity range of Valsartan with TPooo was found to be 0.5 – 3.0 ml; 400 µg/ml. The developed method was found to be precise and accurate from the statistical validation of the analytical data. The proposed method has been successfully applied for analysis of dosage formulations.**

Index Terms **- Valsartan, TPooo, and Spectrophotometric method.**

INTRODUCTION

Valsartan chemically is N-[p-(o-1H-Tetrazol-5ylphenyl) benzyl]-N-valeryl-L-valine1(Figure 1).It is an angiotensin II receptor antagonist, effective in the treatment of hypertension. It is also effective when used alone or in combination with other drugs for the treatment of high blood pressure. It is not official in any of the pharmacopoeia. The pharmacokinetic properties of valsartan have been investigated in healthy volunteers after oral administration of the sample. UV method is commonly employed method for routine analysis since it is economical and easy to perform. Literature reports reveal that olmesartan medoxomil can be estimated by RPLC-HPLC, RPHPLC, LC-MS and HPLC methods individually or in combination with other drugs .Parambi and coworkers developed a UV spectrophotometric method for the estimation of Valsartan in pharmaceutical dosage form.

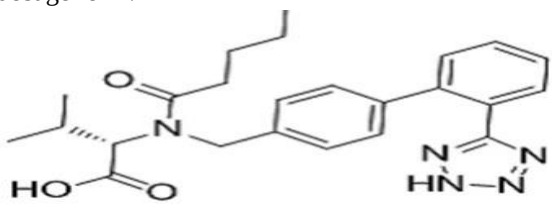

Fig. 1: Structure of valsartan

The authors proposed a simple and reproducible spectrophotometric method for the determination of antiviral drugs.

EXPERIMENTAL

A Systronics UV-Visible double beam spectrophotometer 2203 with 1 cm matched quartz cells was used for all spectral and absorbance measurements. A Systronics digital pH meter 361 was used for pH measurements. All the chemicals used were of AR grade. Solutions of 0.2 % TPooo and 0.1 N hydrochloric acid were prepared using distilled water. AR grade chloroform was used.

Preparation of Standard solution:
The stock solution (1mg/ml) of VLS was prepared by dissolving 100mg of it in 100ml of methanol. A portion of this stock solution was diluted stepwise with the methanol to obtain the working standard VLS solution of concentrations 400 µg/ml.

Preparation of sample solution:
An accurately weighed portion of the powdered tablets equivalent to 100 mg of drug was dissolved in 20 ml of methanol (MeOH), shaken well and filtered. The filtrate was diluted to 100ml with MeOH to get 1 mg/ml solution of drug in formulations.

Preparation of the reagents:
Tpooo (0.2%): Prepared by dissolving 200 mg of Tropaeolin ooo in 100 ml of distilled water and washed with chloroform to remove chloroform soluble impurities.
HCl solution: prepared by dissolving 8.6 ml of con HCl to 1000 ml of distilled water and Standardized.