

Spectrophotometric method for estimation of Valsartan in bulk and tablet dosage form

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Abstract - Simple, accurate, rapid and sensitive method has been developed for the estimation of Valsartan in bulk and pharmaceutical formulations. The method is based on the formation of ion association complex of the drug with eriochrome black-T in acidic buffer of pH 3.5 followed by extraction into chloroform. The linearity range of Valsartan with eriochrome black-T was found to be 50 – 250 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, Eriochrome black-T and Spectrophotometric method.

INTRODUCTION

Valsartan is an Angiotensin Receptor Blocker(ARB) that shows high affinity for the angiotensin II type 1 (AT1) receptors, has a long duration of action, and has the longest half-life of any ARB. 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.

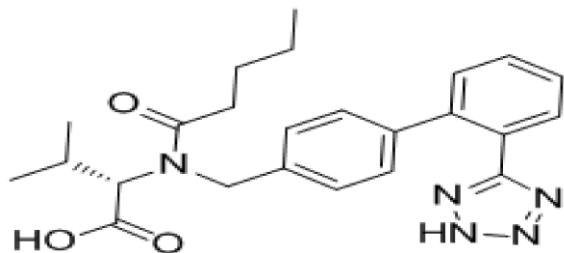


Fig 1 Valsartan

Diovan (Valsartan) is a nonpeptide, orally active, and specific angiotensin II receptor blocker acting on the AT1 receptor subtype. Valsartan is a white to practically white fine powder. It is soluble in ethanol and methanol and slightly soluble in water. Angiotensin II Receptor type 1 antagonists have been widely used in treatment of diseases like hypertension,

heart failure, myocardial infarction and diabetic nephropathy. Their beneficial effects are related to inhibition of Angiotensin II by blockade of AT1 receptor. It was first developed by Novartis and has a wide market in the developed and the developing countries. Valsartan is an angiotensin II receptor blocker (ARB). It works by blocking a substance in the body that causes the blood vessels to tighten. Valsartan relaxes the blood vessels and lowers blood pressure. A lower blood pressure will increase the supply of blood and oxygen to the heart.

Very limited references published on physico-chemical methods in the literature for the assay of VLS in biological fluids and pharmaceutical formulations. Most of them are based on HPLC, IC, CE, and UV-spectrophotometric methods. The analytically useful functional groups in VLS have not been fully exploited for designing suitable visible spectrophotometric methods and so still offer a scope to develop more visible spectrophotometric methods with better sensitivity, precision and accuracy. The author has made some attempts in this direction and succeeded in developing nine methods. All these methods have extended pharmaceutical formulations as well.

UV spectrophotometric method in methanol has been adopted for the determination of VLS in pharmaceutical formulations (Tablet), which has been made use of as a reference method to compare the results obtained by the proposed visible spectrophotometric methods.

EXPERIMENTAL MATERIALS AND METHODS

Instrument

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