

RESEARCH ARTICLE

FIRST ORDER DERIVATIVE SPECTROPHOTOMETRIC DETERMINATION OF TELMISARTAN IN PHARMACEUTICAL FORMULATION

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In present investigation, UV first derivative spectrophotometric methods has been developed for the determination of telmisartan in pharmaceutical formulation. The solutions of standard and sample were prepared in 0.1 M sodium hydroxide. In the UV spectrophotometric method, the quantitative determination of the drug was carried at 295 nm and the linearity range was found to be 4-20 $\mu\text{g/ml}$. For the first order derivative spectrophotometric method, the drug was determined at 311 nm with the linearity ranges 4-20 $\mu\text{g/ml}$. The calibration graphs constructed at their wavelength of determination were found to be linear for UV and derivative spectrophotometric methods. The proposed methods have been extensively validated. There was no significant difference between the performance of the proposed method regarding the mean values and standard deviations. The described method can be readily utilized for analysis of pharmaceutical formulation.

Key words: UV spectrophotometry, First derivative spectrophotometry, Telmisartan, Validation.

INTRODUCTION

Telmisartan, chemically known as 2-[4-[[4-methyl-6-(1-ethylbenzimidazol-2-yl)-2-propylbenzoimidazol-1-yl]methyl]phenyl]benzoic acid (Figure 1), is an angiotensin II receptor antagonist and used in the treatment of high blood pressure, congestive heart failure (CHF) or post-myocardial infarction (MI). It is official in British Pharmacopoeia.

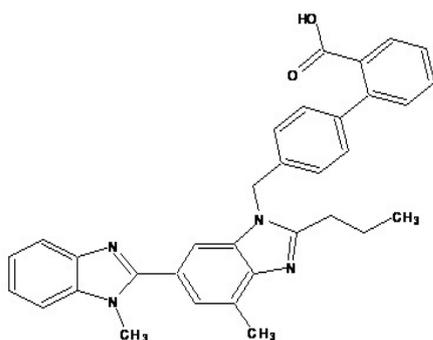


Fig. 1. Chemical structure of telmisartan

Pharmaceutical research is developing increasingly complex molecules and drug formulations, and each novel and highly selective analytical technique is therefore of much potential interest. Literature is enriched with several analytical methods for determination of drugs (el Walily *et al* 1998; Hassan *et al* 2001; Erk, 2003; Erk and Altuntas, 2004; Silva, 2008; Basaveswara Rao *et al* 2012; Patil *et al* 2011; Prasanthi *et al* 2011; Shah *et al* 2011; Suresh *et al* 2011; Stanisiz *et al* 2012). A comparison of the results obtained by derivation absorption spectrophotometry in the ultraviolet region and those obtained by HPLC and other instrumental methods of quantitative analysis of drugs reveal that derivation spectrophotometry can be an economically advantageous alternative in many cases (Subert and Farsa, 2003). So, in the present investigation, first order derivative spectrophotometric determination of telmisartan in pharmaceutical formulation is reported.