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Research Article

DEVELOPMENT OF NEWER FLUORIMETRIC METHOD FOR ESTIMATION OF TELMISARTAN

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ABSTRACT

Objective: Objective of the present study to develop Simple, easily accessible, economic, newer fluorimetric method of estimation for Telmisartan.

Method: The Telmisartan is fluorescent which is measurable in the linearity range of 10- 100 µg/ml in 0.1N Sodium hydroxide solution. The developed method was validated according to ICH guidelines for parameters like accuracy, precision, specificity, ruggedness, robustness and percentage recovery.

Results: The Relative Standard Deviation was 0.701677; recovery was 98-100%. Tablet formulations were used as sample for estimation and the results are found to be well within the specified limit.

Conclusion: Therefore developed method can used for estimation of Telmisatan in pure or in formulations.

Keywords: Fluorimetry, Telmisartan, Estimation, Fluorescent.

INTRODUCTION

Telmisartan is Angiotensin II receptor antagonist widely used as antihypertensive. The drug was estimated by various methods [1-3] such as colorimetric [4], spectrophotometric [5-6], spectrofluorimetric [7], chromatographic method in single or in combination with other drugs were reported methods of estimation [8-9]. The use of fluorimetric method was reported for estimation of Lisinopril [10-11]. The literature survey reveals that there is no fluoremetric method available for estimation of Telmisartan.

Objectives

It is imperative that to have simple, rapid, economic, easily accessible method of estimation for Telmisartan. The aim of present study is to develop new fluorimetric method of determination for Telmisartan in pure or in the dosage form.

Telmisartan is fluorescent in methanol and alkali solutions like Sodium hydroxide. Under the present study fluorimetric method of estimation was developed for Telmisartan in Sodium hydroxide solution using standard Telmisartan drug and tablet dosage forms as sample (Figure-1and Table 1).

MATERIALS AND METHODS

Fluorimetric determination was carried out using Photofluorometer,-152 model. The instrument was calibrated prior to measurements and fluorescence intensity for test and reference solutions were recorded in 3 ml borosilicate cells. The Relative Intensity was measured with filters of excitation wavelength of 366 nm and emission wavelength of 475 nm.

Standard drug, marketed formulations and reagents used

Telmisartan standard drug was procured from Glochem Industries Ltd. The reagents and solvents used were of Analytical Grade. Commercial brands of Telmisartan tablets Telmisartan were used as samples for estimation.

Procedure for estimation: Telmisartan standard drug of 100 mg is weighed accurately and transferred to 100 ml volumetric flask, 50 ml of 0.1N sodium hydroxide was added, shaken well to dissolve then volume was made 0.1N Sodium hydroxide. Different dilutions were made with standard solution to get different concentrations from 10µg/ml to 100µg/ml. Readings were recorded by 0.1N Sodium hydroxide as blank to set zero reading and diluted Telmisartan standard was used to set intensity 100. Sample readings were recorded using commercial brands of Telmisartan. Standard dilutions in the range of 10-100 µg/ml prepared for linearity measurement.

Estimation of Commercial Tablets: 20 tablets are weighed and ground to fine powder. The tablet powder equivalent to 100 mg of Telmisartan was weighed and transferred to 100 ml volumetric flask; 50 ml of 0.1N sodium hydroxide was added, shaken well to dissolve then volume was made with 0.1N Sodium hydroxide. Different dilutions were made with standard solution to get different concentrations from 10µg/ml to 100µg/ml. and readings were recorded against 0.1N Sodium hydroxide as blank.

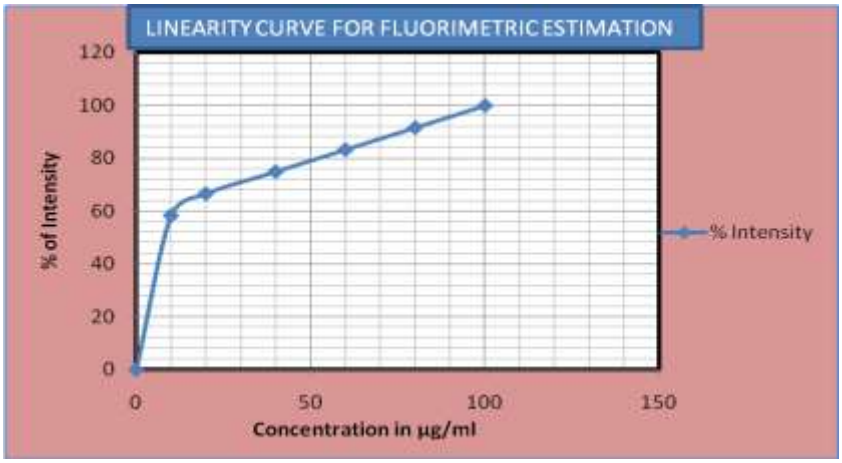

Fig 1: Linearity cuve for the fluorimetric esimation of Telmisartan

Table 1: Statisical calculation various validation parameters

Validation Parameters	Value
Correlation Coefficient	0.9428
Std Deviation	36.25
Relative std deviation	0.7016
Slope	0.4452
Intercept	56.16
Percentage of Recovery	98-100%

RESULTS AND DISCUSSION

The developed method was validated for various analytical parameters like accuracy, precision specificity, ruggedness, robustness and which are expressed statistically. All the parameters were found to be within specified limit (Table 1). The linearity range was 10µg/ml to 100µg/ml (Figure 1). Therefore developed method was applicable for estimation for Telmisartan in pure and dosage forms.

CONCLUSION

Fluorimetric determination with formulation of Telmisartan by present method shows that developed method is simple, accurate which can be used for characterization and estimation as one of the chemical evaluation techniques.

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