Spectrophotometric Method for the Determination of Terazosin

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A simple and sensitive spectrophotometric method for the determination of terazosin in pure and dosage forms is proposed. The drug forms a stable green chromogen with ferric chloride and potassium ferricyanide, exhibiting maximum absorption at 740 nm. The chromogen obeys Beer - Lambert's law in the concentration range of 1-10 µg/ml.

Terazosin is 1-(4-amino-6,7-dimethoxy quinazoline-2-yl)-4-(tetrahydro-2-furanyl) piperazine hydrochloride[1], which is an antihypertensive agent. A literature survey revealed that only fluorimetric[2] and HPLC[3] methods are available for its determination. In the U.V. region, terazosin shows absorption maxima at 235 nm. The authors now report the development of a spectrophotometric method, using ferric chloride and potassium ferricyanide[4]. The complex, formed due to the reduction of the ferric salt to ferrous form by terazosin and subsequent coupling with potassium ferricyanide, shows absorption maxima at 740 nm.

A stock solution of terazosin (1 mg/ml), in the form of bulk drug or formulation, was prepared in methanol. From this, a working standard solution (100 µg/ml) was prepared by diluting with distilled water. Solutions of ferric chloride (0.1 M) and potassium ferricyanide (0.1% w/v) were prepared in distilled water.

To a series of 10 ml volumetric flasks, aliquots of standard drug solution ranging from 0.1 to 1.0 ml were added. This was followed by the addition of 1.5 ml of ferric chloride and 1.0 ml of potassium ferricyanide. Appropriate amount of distilled water was added to each flask to bring the total volume to 10 ml. The absorbance of the green coloured complex formed was measured at 740 nm against a reagent blank. The amount of terazosin present in the sample solution of the formulation (tablets) was computed from the calibration curve.

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The optical characteristics and precision data of the proposed method have been calculated and presented in Table 1. The method was also applied for assaying terazosin in tablets. To evaluate the validity and reproducibility of the proposed method, known amount of the pure drug was added to the previously analysed pharmaceutical formulation and the mixtures were again analysed. The percent recovery data of the drug by this

TABLE 1: OPTICAL CHARACTERISTICS AND PRECISION DATA

λ_{max}	740 nm
Beer's law limit (µg/ml)	1-10
Sandell's sensitivity (µg/cm²/0.001 A.U.)	1.23×10^{-2}
Molar extinction coefficient (mole^{-1} cm^{-1})	0.373×10^{-5}
Correlation coefficient	0.9942
Regression equation (b + aC)	
Slope (a)	6.39×10^{-2}
Intercept (b)	0.009735
Percent relative standard derivation (% RSD)	0.7481
Percent range of error	
Confidence limit with 0.05 level	0.6255
Confidence limit with 0.01 level	0.9254

A.U: Angstrom units; C: Concentration

TABLE 2: ASSAY OF TERAZOSIN IN TABLETS

Sample	Labelled amount (mg/ml)	Amount obtained (mg) by the proposed method	Percent recovery
1.	1.0	0.99	100.04±0.4
2.	1.0	0.99	100.25±0.2
3.	1.0	0.98	99.72±0.5

method have been given in Table 2. Interference studies revealed that the excipients and additives commonly present in tablets did not have any effect in the determination.

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Simultaneous Estimation of Losartan Potassium And Hydrochlorthiazide in Combination

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A simple and accurate method for the Simultaneous estimation of losartan potassium (LP) and hydrochlorthiazide (HZ) has been developed. The method employs simultaneous equations to estimate these drugs. In methanol, losartan potassium and hydrochlorthiazide showed maximum absorbance at 236 and 270 nm respectively. Losartan potassium and hydrochlorthiazide obeyed Beer Lambert's law in the concentration range from 2-20 µg/ml and 1-50 µg/ml, respectively. The results of analysis have been validated statistically and by recovery studies.

HZ is a diuretic drug[1]. Chemically it is 6-chloro-3,4-dihydro-2H-1,2,4-benzodiazine-7-sulphonamide-1,1-dioxide. It is official in IP, BP and USP. LP is an angiotensin II receptor antogonist[2]. Chemically the drug is 2-butyl-4-chloro {(2'-(1H tetrazol-5yl) [1,1'-biphenyl]-4-yl)methyl}-1H-imidazole-5-methanol. A few analytical methods[3-7] were developed for the individual estimation of LP and HZ. One RP-HPLC[8] was reported for simultaneous estimation. The present report describes a precise method for their estimation using a Jasco[R] UV-VIS Spectrophotometer.

A Jasco[R] double beam Spectrophotometer model V-530 with matched quartz cells corresponding to 10 mm

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