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Research Article

UV Method Of Development For Estimation Of Losartan In Bulk & Marketed Formulation

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ABSTRACT

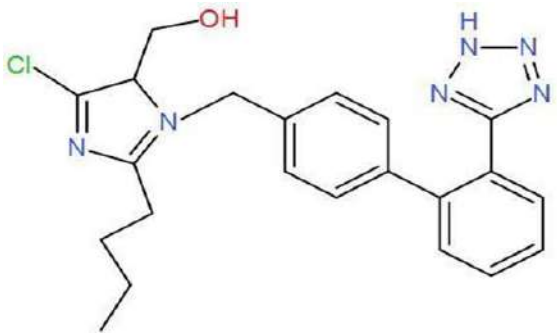
Attempts were made to develope UV method for simultaneous estimation of losartan from tablet. the mobile phase methanol:water(70:30 ratio).pKa was found drug 5.5.pH of drug was found to be 3.Selection of wavelength found to 208nm.The linearity,accuracy,precision,range,LOD,LOQ was within the limit as specified by the ICH guidelines.Hence these method simple economic precise accurate and reproducible.

INTRODUCTION

DRUG PROFILE

Chemical Name –[2-butyl-5-chloro-3-[[4-[2-(2*H*-tetrazol-5-yl) phenyl] phenyl] methyl] imidazol-4-yl] methanol

Structure –



Molecular Formula -C22H23ClN6O

Brand Name-Losar-25

Relative Molecular Mass -422.9 gram/moles

Solubility-Soluble in Water, Methanol.

Pka-5.5

Pharmacology-Losartan is an angiotensin II receptor blocker used to treat hypertension, diabetic nephropathy, and to reduce the risk of stroke. Losartan has a long duration of action as it is given once daily. Patients taking losartan should be regularly monitored for hypotension, renal function, and potassium levels.

Experimental Work-

MATERIALS AND INSTRUMENTS

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Table 6.1: List of chemicals

Chemicals	Source
Losartan	Swapnroop Research Pvt Ltd. Aurangabad.
Distilled Water	Prepared in Lab (S'COP)
Methanol	Shodh Adavntech Aurangabad

Table 6.2: List of Equipment

Equipment	Company
Single beam UV-Visible Spectrophotometer range 200-400 1cm quartz cell	Lab India
pH METER	LABINDIA, PHAN
Sonicator	Ultrasonic

FORMULATION –

Dosage Form – Tablet Brand Name – Losar-25

The Marketed Formulation Contain 25mg

Result and Discussion-

Selection of Wavelength –

Tablet powder equivalent to 10 mg of Losartan was dissolved in small quantity of diluent in a 10 mL volumetric flask and final volume was made up to 10 ml with same. Sonicated for 10 minutes. Then the absorbance of the solution (after suitable dilution) was measured at 208nm using UV/visible spectrophotometer (Lab India) against diluent as a blank.

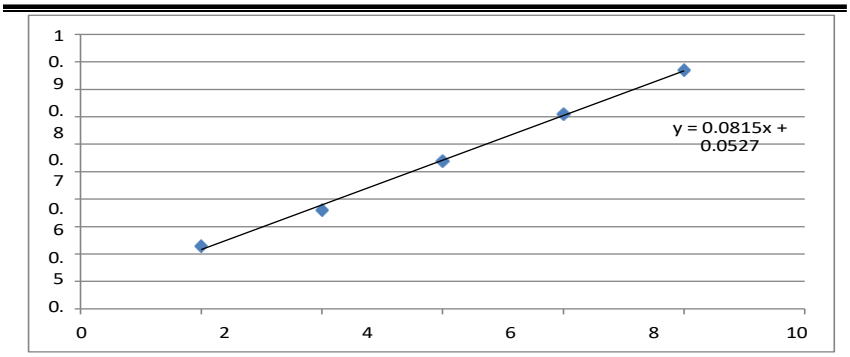
Analysis of Marketed Formulation –

No.	ID	Mode	A	Assay (%)
			208.00nm	
1	Sample	Absorbance	1- 0.875 2- 0.872 3- 0.873	100.9%
2	Standard	Absorbance	0.865	

Validation of UV Method –

Linearity and Range –

Concentration in µg/ml	Absorbance
2	0.230
4	0.359
6	0.539
8	0.710
10	0.869



Linearity curve for Losartan

Linear Regression Data for calibration curve –

Parameters	Results
λ max (nm)	208 nm
Beer's limit	2 – 10 µg/mL
Regression equation	y=0.0815x + 0.0527
Correlation equation	R^2 = 0.9976
Slope	0.0815
Intercept	0.0527

Precision –

Intra – day precision studies.

No.	Concentration in µg/ml	Absorbance
I (11.30AM)	3	0.352
	5	0.432
	7	0.702
II (14.30PM)	3	0.349
	5	0.430
	7	0.701

Concentration in µg/ml	3	5	7
%RSD	0.60%	0.32%	0.10%

Intra – Day precision parameter with % RSD

Inter – day precision studies.

No.	Concentration in µg/ml	Absorbance
Day 1 (20/06/22)	3	0.352
	5	0.432
	7	0.702
Day 2 (21/06/22)	3	0.358
	5	0.444
	7	0.713

Concentration in µg/ml	3	5	7
%RSD	1.2%	1.9%	1.1%

Inter– Day precision parameter with % RSD

LOD & LOQ of Losartan –

Parameter	µg/mL
LOD (Limit of Detection)	1.68
LOQ Limit of Quantification)	5.094

CONCLUSION

The simple spectrophotometric method for determination of Losartan has been developed and validated as per ICH guidelines. The developed method is found to be sensitive, accurate and reproducible and can be used for the routine quality control analysis of Losartan in bulk and pharmaceutical formulations. Attempts were made to develop spectrophotometric for estimation of Losartan. The spectrophotometric methods were developed for estimation. For the spectrophotometric methods, Methanol was used as solvent. The wavelength used for Losartan 208nm. The spectrophotometric methods were validated according to the ICH guidelines. The linearity, precisions, LOD, LOQ by the spectrophotometric method were within the limit as specified by the ICH guidelines. Hence the

methods were found to be simple, accurate, precise, economic and reproducible. so the proposed methods can be used for the routine quality control analysis of Venlafaxine in bulk drug as well as in formulations.

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