

**SIMPLE UV SPECTROPHOTOMETRIC ASSAY OF HYDROXAZINE**

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**ABSTRACT**

For the assay of hydroxazine a least time consuming simple and efficient UV spectrophotometric method has been developed. The assay is based on the ultraviolet UV spectroscopy measuring absorbance maxima at about 230nm wavelength of hydroxazine using water as solvent. A sample of drug was dissolved in water to produce a

the furosemide solution contain hydroxazine. Similarly, a sample of ground tablets of different brand were dissolved in water and various dilutions were made. The absorbance of sample preparation was measured at 230nm against the solvent blank. Regression line was obtained for different dilutions. It shows a linear relationship between absorbance and concentration.

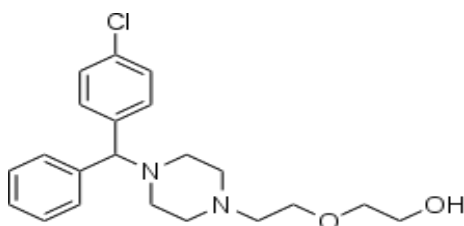
**KEYWORD:** Hydroxazine, efficient UV spectrophotometric.

**INTRODUCTION**

First-generation antihistamine hydroxazine belongs to the diphenylmethane and piperazine class of drugs. Hydroxazine have strong anxiolytic, mild antiobsessive and antipsychotic properties as it antagonize several receptor systems in the brain.<sup>[1]</sup> it is used for the symptomatic relief of anxiety associated with psychoneurosis. As it has antihistamine effects it can also be used for the treatment of severe cases of itching, hyperalgesia and nausea induced by motion sickness and used in some cases to relieve the effects of opioid withdrawal, it is also an effective sedative and hypnotic.<sup>[2]</sup> It also have potential of

abuse, dependence, addiction, and toxicity of other drugs used for the same range of therapeutic reasons.<sup>[3]</sup> Hydroxyzine is as effective as the benzodiazepine drug such as bromazepam in the treatment of generalised anxiety disorder.<sup>[4]</sup> Hydroxyzine can also be used for the treatment of allergic conditions, such as urticaria dermatoses, and pruritus mediated by histamine. These have also been confirmed in both recent and past studies to have no adverse effects on the liver, blood, nervous system or urinary tract.<sup>[5]</sup>

The aim of study is to develop a simple and least cost effective method for the assay of hydroxyzine. This method is preferred over other methods as uv as routine analysis in pharmaceutical organizations. We have already performed such type of work Spectrometers are easy and simple system it take less time to analyze. This method can be applied.



**Fig-1 structure of Hydroxyzine**

## EXPERIMENTAL

UV visible 1601 Shimadzu double beam spectrophotometer was used to measurement of spectra. The solvent which are used for the assay was water.

### Wavelength Selection

About 200 ppm of hydroxyzine solution was accurately prepared in water. This solutions were scanned in the 200-400 nm UV region. The wavelength maxima ( $\lambda_{max}$ ) was observed at 230 nm and this wavelength was adopted for absorbance measurement.

### Standard Stock solution

20 tablets of hydroxyzine from the marketed sample were weighed and crushed uniformly with the help of a mortar and pestle. By calculating the average weighed sample powder equivalent to 40 mg of hydroxyzine was transferred into a volumetric flask containing 10mL water. The solutions were sonicated for about 5 min and than make up volume upto 100 ml with water.

### Sample Preparation

Four different dilutions were then made i.e of 100ppm, 50ppm, 25ppm and 12.5ppm from the stock solution by serial dilution.

## Procedure

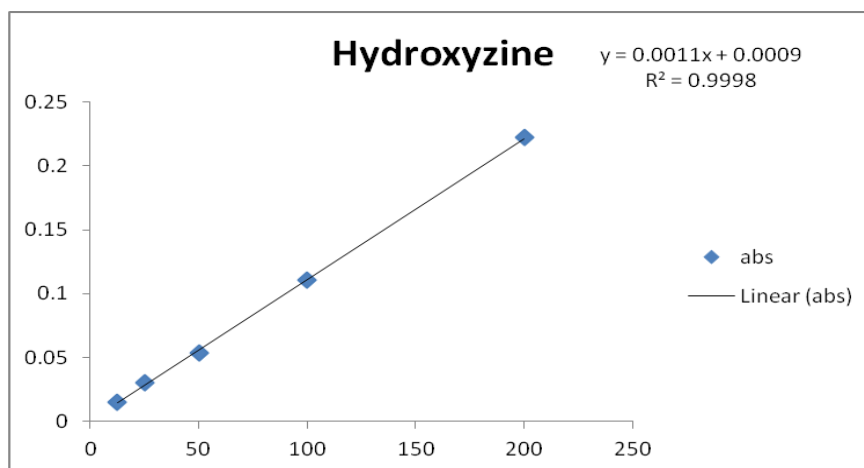
After preparation of standard and sample solutions, strength of solution 200ppm, 100 ppm, 50ppm, 25ppm and 12.5ppm in 100 ml absorbance of the sample preparation and standard preparation in 1cm cell at the wavelength of maximum absorbance at about 230nm, using a spectrophotometer, using the blank solution. Regression line was obtained for different dilutions.

## RESULT AND DISCUSSION

We have prepared standard and sample solutions, strength of solutions are 200ppm, 100 ppm, 50ppm, 25ppm and 12.5ppm in 100 ml, absorbance of the sample preparation and standard preparation at the wavelength of maximum absorbance at about 230nm, using a spectrophotometer was measured, using the blank solution. At 200ppm of concentration it shows absorbance of 0.222, at 100ppm it shows to be 0.111, at 50 ppm concentration the absorbance is found to be 0.054, at 25ppm the absorbance is 0.03 and at 12.5ppm it is 0.015. Regression line was obtained for different dilutions. It shows a linear relationship between absorbance and concentration. brands. These studies are very helpful for pharmacist, doctors and drug prescribers to choose best drug.<sup>[6-32]</sup>

**Table 1. Absorbance of hydroxyzine at different dilutions.**

Con ppm	abs
200	0.222
100	0.111
50	0.054
25	0.03
12.5	0.015



**Fig 2. Linearity graph for different dilutions of hydroxyzine.**

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