The present method is a high performance liquid chromatographic method to determine telmisartan from its formulation. Various experiments were carried out to establish the method. The mobile phase wash Acetonitrile and methanol 60:40 and was found to be ideal for the estimation of telmisartan. The elution followed was (RT:1.92 min). The mean recovery of telmisartan was (100.2%). The values of percent recovery and standard deviation show that the proposed method is reproducible, accurate and precise.

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The authors thank Dr. F.V. Manvi, Principal, K. L. E. S’s College of Pharmacy, Belgaum and Prof. A. D. Taranalli, Vice-Principal for the necessary facilities and encouragement.

REFERENCES

Reverse Phase High Performance Liquid Chromatographic Determination of Zidovudine and Lamivudine in Tablet Dosage Form.

M. S. PALLED, P. M. N. RAJESH, M. CHATTER AND A. R. BHAT
Department of Pharmaceutical Analysis, K. L. E. S’s College of Pharmacy, Belgaum-590 010
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A simple, economical, fast and precise reverse phase high performance liquid chromatographic method has been developed for the simultaneous determination of zidovudine and lamivudine in from tablet dosage form. A BDS Hypersil C18 (5 micron 25 cm×4.6 mm) column from Thermo in isocratic mode with mobile phase o-phosphoric acid:methanol (70:30) buffered and adjusted to pH 5 by using triethylamine. The flow rate is 1.4 ml/min and effluent is monitored at 220 nm.

Zidovudine is 1-(3-azido-2,3-dideoxy-β-D-ribofuranosyl)-5-methylpyrimidine-2,4(1H,3H)-dione and lamivudine (2R,cis)-4-amino-1(2-hydroxy methyl)-1,3-oxathiolon-5-yl)-2-(1H)-pyrimidinone (-)-2'-deoxy-3'-thiacyldine. The combination is used in the treatment of human immuno deficiency virus infecter HIV, the virus that causes AIDS. Literature survey revealed that estimation of zidovudine and lamivudine by the USP method involved the determination of zidovudine by titrimetry and lamivudine in urine by HPLC. Whereas, the proposed method describes the simultaneous determination of zidovudine and lamivudine by HPLC, which is simple, precise, rapid and selective.

High performance liquid chromatograph (Milton and Roy) equipped with a UV detector Spectrometer 3100, variable wavelength CM 4000 pump and chromatograph I/F module form Indetech instrument, Injecter is manual, 20 μl loop and a Shimadzu UV-1201 Spectrophotometer were used.

Standard zidovudine from Strides Arco Laboratories Limited, Mumbai and lamivudine from Cadila Pharmaceuticals, Ahmedabad were procured. The combination formulations have been obtained from local drug stores. Methanol HPLC grade, water HPLC grade were used in this investigation. Potassium dihydrogen phosphate (6.8 g) was dissolved in water (1 l). Buffer (650 ml) and methanol (350 ml) were mixed and filtered through 45 μ filter paper and sonicated. Separate calibration curve was obtained. Solutions were prepared by taking varying concentrations of zidovudine (10 to 50 μg) and lamivudine (10 to 30 μg). Plotting graph area vs. concentration allowed checking linearity of detector response.

*For correspondence
E-mail: anilchandrabhat@yahoo.com
The mobile phase used was buffer and methanol (65:35). Calibration curves were constructed for zidovudine and lamivudine by plotting the ratio of peak area of drug i.e. (y axis) against the amount of drug (concentration in μg/ml x axis).

Twenty tablets, each of combined dosage were accurately weighed and powdered. A fine composite quantity equivalent to 300 μg of zidovudine and 150 μg of lamivudine taken dissolved in 100 ml of mobile phase and diluted to obtain final concentration 30 μg of zidovudine and 15 μg of lamivudine.

To study the accuracy, reproducibility and precision of the proposed method recovery experiments were carried out. A fixed amount of the pre-analyzed sample was taken and standard drug was added at three different levels. Each level was repeated at least 5 times. The summaries of recovery studies are reported in Tables 1 and 2.

The present study comprises a high performance liquid chromatography method to determine zidovudine and lamivudine from tablet dosage forms. Various experiments were carried out to separate them and mobile phase, bearing phosphate buffer and methanol in proportion of (65:35), was found to be ideal for the separation. The elution was in the following order lamivudine (RT/2.64 min) zidovudine (RT/4.96). The mean recoveries of zidovudine and lamivudine were 100%. The values of percent recovery and standard deviation indicate that the method is accurate, reproducible and precise. The summaries of final results are illustrated in Tables 3.

**TABLE 1: RECOVERY OF ZIDOVUDINE**

<table>
<thead>
<tr>
<th>Label claim (mg)</th>
<th>Amount of standard added (mg)</th>
<th>Amount recovered (mg)</th>
<th>% of recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>0</td>
<td>299.8</td>
<td>99.9</td>
</tr>
<tr>
<td>300</td>
<td>100</td>
<td>400.4</td>
<td>100.0</td>
</tr>
<tr>
<td>300</td>
<td>200</td>
<td>500.5</td>
<td>100.0</td>
</tr>
<tr>
<td>300</td>
<td>300</td>
<td>600.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**TABLE 2: RECOVERY OF LAMIVUDINE**

<table>
<thead>
<tr>
<th>Label claim (mg)</th>
<th>Amount of standard added (mg)</th>
<th>Amount recovered (mg)</th>
<th>% of recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>0</td>
<td>150.4</td>
<td>100.0</td>
</tr>
<tr>
<td>150</td>
<td>50</td>
<td>199.6</td>
<td>99.8</td>
</tr>
<tr>
<td>150</td>
<td>100</td>
<td>249.7</td>
<td>99.9</td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td>300.3</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 3: ANALYSIS OF ZIDOVUDINE AND LAMIVUDINE TABLETS

<table>
<thead>
<tr>
<th>Name of company</th>
<th>Amount found mg/tablet ± SD.</th>
<th>%RSD.</th>
<th>Percent of assay</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZIDOVUDINE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GLAXO</td>
<td>300.2±0.37</td>
<td>0.13</td>
<td>100.1</td>
</tr>
<tr>
<td>CIPLA</td>
<td>300.4±0.46</td>
<td>0.23</td>
<td>100.1</td>
</tr>
<tr>
<td>LAMIVUDINE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GLAXO</td>
<td>150.4±0.86</td>
<td>0.34</td>
<td>100.3</td>
</tr>
<tr>
<td>CIPLA</td>
<td>150.7±0.85</td>
<td>0.61</td>
<td>100.4</td>
</tr>
</tbody>
</table>

A linear relationship was obtained for zidovudine 10-50 µg/ml. For lamivudine it was obtained at 10-30 µg/ml. Calibration curves could be represented by the following Eqns.  

\[
Y_{\text{zidovudine}} = 0.0413X + 0.0756, \quad (r=0.999) \quad \text{and} \quad Y_{\text{lamivudine}} = 0.0433X + 0.0863, \quad (r=0.999).
\]

These equations were used for the determination of zidovudine and lamivudine from tablets.

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REFERENCES


High Performance Thin Layer Chromatographic Method for Estimation of Moxifloxacin in Tablet Dosage Form.

S. A. SHAH, I. S. RATHOD, B. N. SUHAGIA AND 'M. V. BALDANIYA*

1Dept. of Quality Assurance, L. M. College of Pharmacy, Navrangpura, Ahmedabad- 380 009
2Dept of Pharmaceutical Chemistry, Shri Sarvajanik Pharmacy College, Mehsana-384 001

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A new simple, sensitive, specific and precise high performance thin layer chromatographic method has been developed for estimation of moxifloxacin in its tablet formulation (400 mg). In this method, standard solutions and sample solution of moxifloxacin were applied on precoated silica gel G60F\textsubscript{254} TLC plate and developed using n- butanol:methanol:ammonia (4:4:2 v/v) as mobile phase.

*For correspondence
E-mail: payalhimaa9@yahoo.com
99, Payal Park Society, Satellite Road, Jodhpur Tekra, Ahmedabad-15.