A new, simple, rapid and novel spectrophotometric method has been developed for simultaneous estimation of Famotidine and Diclofenac Potassium. For this, simultaneous equation method is used. The method involved measurement of absorbance at two wavelengths, 266 nm and 286 nm max of Famotidine and Diclofenac Potassium respectively. Beer’s law obeyed in concentration range of 2-10 µg/mL and 5-25 µg/mL for Famotidine and Diclofenac Potassium respectively. The proposed method is recommended for routine analysis since it is rapid, simple, accurate and also sensitive and specific by no heating and no organic solvent extraction. This paper describes the development and validation of UV spectroscopic method for Simultaneous estimation of Famotidine and Diclofenac Potassium in combined solid dosage form.

**Key words:** Famotidine and Diclofenac Potassium Simultaneous Equation Method

**INTRODUCTION**

Famotidine (fig.1a) chemically it is N’(aminosulfonyl)-3[2-(diaminomethylene)amino]-4Thiazolyl) methyl) thio] propionamide. It is an antihistaminic agent which reduces gastric acid secretion by blocking H₂ receptors.

Diclofenac Potassium (fig.1b) chemically it is -(2, 6-dichlorophenyl) amino] benzene acetic acid monopotassium salt. It comes under the category of Non-steroidal anti-inflammatory agent and inhibits prostaglandin synthesis.

**ABSTRACT**

A new, simple, rapid and novel spectrophotometric method has been developed for simultaneous estimation of Famotidine and Diclofenac Potassium. For this, simultaneous equation method is used. The method involved measurement of absorbance at two wavelengths, 266 nm and 286 nm max of Famotidine and Diclofenac Potassium respectively. Beer’s law obeyed in concentration range of 2-10 µg/mL and 5-25 µg/mL for Famotidine and Diclofenac Potassium respectively. The proposed method is recommended for routine analysis since it is rapid, simple, accurate and also sensitive and specific by no heating and no organic solvent extraction. This paper describes the development and validation of UV spectroscopic method for Simultaneous estimation of Famotidine and Diclofenac Potassium in combined solid dosage form.

**Key words:** Famotidine and Diclofenac Potassium Simultaneous Equation Method

**MATERIALS AND METHODS**

Standard Famotidine and Diclofenac Potassium Simultaneous were provided by Dr. Reddy’s Lab. and Wama pharma. All other chemicals were of analytical grade. Scanning of drugs were done on double beam UV – Spectrophotometer model Shimadzu 1601 with 10 mm matched quartz cells.

**Preparation of Standard Drug Solution:**

Standard stock solution A: An accurately weighed quantity of FAM (50 mg) was dissolved in DMF (25 mL) in volumetric flask (50 mL). The volume was made up to mark with DMF. Appropriate dilution were made from this resulting stock solution with NaOH (0.1 N) so as to get a concentration of 100 µg/mL.

Standard stock solution B: An accurately weighed quantity DICP (50 mg) was transferred to volumetric flask (50 mL) and was dissolved in DMF (25 mL) in volumetric flask (50 mL). The volume was made up to mark with DMF. Appropriate dilution were made from this resulting stock solution with NaOH (0.1 N) so as to get a concentration of 100 µg/mL.

Mixed standard stock solution C: An aliquots portion of FAM stock solution & DICP stock solution in the ratio of 1:2.5 were mixed in volumetric flask (50 mL) and volume was adjusted up to mark with NaOH (0.1 N).
Twenty tablets were weighed and finely powdered. An accurately weighed quantity of the powder equivalent to 10 mg of FAM was taken in volumetric flask (50 mL) and dissolved in about 10 ml DMF and sonicated for 15 minutes, it was further diluted up to mark with DMF. The resulting solution was filtered and aliquot portion of the filtrate was further diluted with NaOH (0.1 N) so as to get final conc of about 4.0 µg/mL of FAM. The absorbance of solution was measured at two selected wavelengths against blank. The results of assay are given in Table 4.

### Table 3: Results of analysis of tablet sample

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Label claim (mg/tab)</th>
<th>% Label claim estimated* (Mean ± S.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td>20</td>
<td>100.85</td>
</tr>
<tr>
<td>DICP</td>
<td>50</td>
<td>101.37</td>
</tr>
</tbody>
</table>

### Table 4: Recovery study

<table>
<thead>
<tr>
<th>Drug in standard mixture (µg/ml)</th>
<th>% Recovery ± S.D.*</th>
<th>Coefficient of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DICP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Reference