# CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Objectives of the Investigation</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter–I</td>
<td></td>
<td>1-4</td>
</tr>
</tbody>
</table>
| Chapter-II | **Introduction- Literature on Bioavailability and Dissolution rate**  
Dissolution and Absorption of Drugs from Solid Dosage Forms  
Methods to Enhance the Dissolution Rate and Absorption of Poorly Soluble Drugs  
Newer Technologies  
Biopharmaceutical Classification System | 5-14 |
| Chapter-III | **Introduction- Literature on Cyclodextrin Complexation.**  
Cyclodextrins  
Absorption and Toxicity  
Formation of Complexes  
Methods for Detection of Inclusion Complex formation and Determination of Complex Stability Constant.  
Applications of Cyclodextrins.  
Recent Research Work on Cyclodextrin Complexation: Literature on Cyclodextrin-Surfactant Systems  
Literature on Solutol HS15 | 15-43 |
| Chapter-IV | **Literature Review of Drugs Investigated**  
Efavirenz-Profile  
Recent Past Work on Enhancement of Solubility, Dissolution Rate and Bioavailability of Efavirenz.  
Ritonavir-Profile  
Recent Past Work on Enhancement of Solubility, Dissolution rate and Bioavailability of Ritonavir. | 44-70 |
Chapter-V  Analytical Methods  71-85
Method for the Estimation of Efavirenz  71
Validation of the Method:  71
Discussion  74
Method for the Estimation of Ritonavir  74
Validation of the Method  75
Discussion  77
Estimation of Efavirenz in Plasma Samples  77
Results and Discussion  85

Chapter-VI  Factorial Studies on the effects of Cyclodextrins and Solutol HS15 on the Solubility and Dissolution rate of Efavirenz and Ritonavir  86-121
Experimental  86
Methods  87
Results  92
Discussion of Results  105
Drug - Excipient Compatibility Study  114
Results and Discussion  120

Chapter-VII  Factorial Studies on the Formulation and Evaluation of Efavirenz and Ritonavir tablets employing Cyclodextrins and Solutol HS15  122-152
Experimental  122
Methods  124
Results  127
Discussion of Results  148

Chapter-VIII  Pharmacokinetic Evaluation of Efavirenz- βCD- Solutol HS15 Complexes  153-161
Determination of Pharmacokinetic parameters  154
Results  157
Discussion of Results  160
<table>
<thead>
<tr>
<th>Chapter-IX</th>
<th>Stability Studies</th>
<th>162-168</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Methods</td>
<td>162</td>
</tr>
<tr>
<td></td>
<td>Results</td>
<td>163</td>
</tr>
<tr>
<td></td>
<td>Discussion of Results</td>
<td>168</td>
</tr>
<tr>
<td>Chapter-X</td>
<td>Summary, Conclusions and Recommendations</td>
<td>169-179</td>
</tr>
<tr>
<td>Chapter-XI</td>
<td>References</td>
<td>180-197</td>
</tr>
<tr>
<td></td>
<td>List of Publications</td>
<td>198</td>
</tr>
</tbody>
</table>