The Influence Dissolution Media pH on Drug Release from Ethylcellulose Coated Multic太平ules

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Abstract Summary

The influence of dissolution media pH on drug release from ETHOCEL™ coated multiparticulates was investigated. Drug release was found to be independent of dissolution media pH.

Introduction

In order to achieve a consistent extended drug delivery, it may be necessary to maintain similar drug release while dosage form travels across the physiological pH range. The objective of this work was to carry out a comparative evaluation of drug release from ethylcellulose coated multiparticulates in both gastric and intestinal pH media for oral or non-ionic drugs.

Experimental Methods

Drug Layering of Sugar Spheres

Four model drugs; chlorpheniramine maleate (CPM), guaifenesin (GUA), acetaminophen (APAP) and amlodipine besylate (AMD) were used in this study. The four model drugs are characterized below.

<table>
<thead>
<tr>
<th>Model Drug</th>
<th>Characteristics</th>
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<tbody>
<tr>
<td>CPM</td>
<td>Atorvastatin</td>
</tr>
<tr>
<td>GUA</td>
<td>Soluble</td>
</tr>
<tr>
<td>APAP</td>
<td>Sparingly soluble</td>
</tr>
<tr>
<td>AMD</td>
<td>Slightly soluble</td>
</tr>
</tbody>
</table>

The model drugs coated were 18/20 mesh (850 - 1000 µm) sugar spheres (SUGLETS™, Colorcon), in a Pam-Glatt GPCG-1 fluidized bed coater (Pam-Glatt Pharma Technologies, India) equipped with a Wärtsilä column (200mm length) using Hypromellose 2910 (METHOCEL™ E8 Premium M4, The Dow Chemical Company, USA) as a binder. Process parameters employed in the drug layering are listed in Table 3. A typical coating consisted of 7% solids concentration of coating solution. The process parameters employed in the drug layering are shown in Table 3.