Novel Strategy for the Formulation of Poorly Water-Soluble Drugs: Nystatin Microencapsulation.

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Objective.

Design, develop and characterize two types of microparticles as appropriate nystatin delivery systems for topical use: alginate microparticles (AM) and chitosan coated alginate microparticles (CCM).

Materials and methods.

**Synthesis of microparticles.**

Water + Sodium alginate (3%) + Nystatin + CaCO₃ → Vegetable oil + Surfactant (2%) → Vegetable oil + CH₃COOH → CaCl₂ (5%) → Microparticles

Coating procedure.

Chitosan (0.5%) → Coated microparticles

**Results.**

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th>CCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean particle size (µm)</td>
<td>51,21</td>
<td>57,20</td>
</tr>
<tr>
<td>PY (%)</td>
<td>83,26</td>
<td>79,67</td>
</tr>
<tr>
<td>LD (%)</td>
<td>Inside: 6,78</td>
<td>4,87</td>
</tr>
<tr>
<td>EE (%)</td>
<td>Inside: 81,12</td>
<td>85,08</td>
</tr>
</tbody>
</table>

Table 1. Mean particle size and average percentage yield (PY), loading capacity (LD) and encapsulation efficiency (EE).

**Conclusions.**

The ability of these systems to adhere mucous membranes has great appeal for the treatment of localized infections. Thus these microparticulate systems could be proposed as a suitable vehicle for this kind of mucosal infections being an alternative therapy.

**References.**