

## Development of mucoadhesive drug delivery systems intended for buccal administration

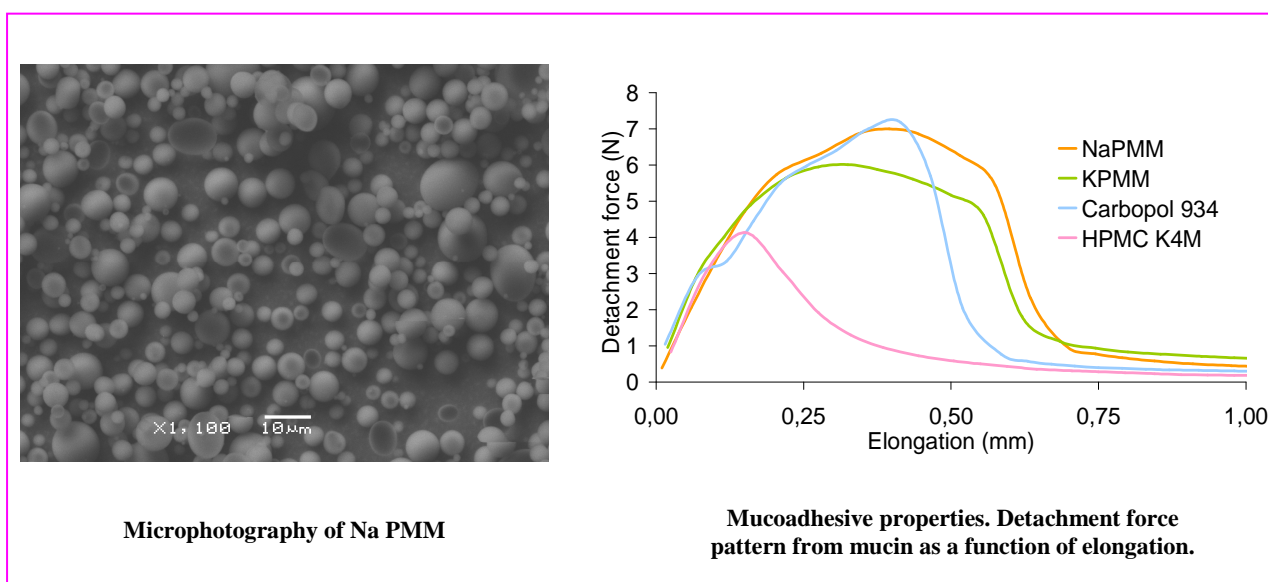
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New low-swellable bioadhesive materials were obtained by salification with alkali of the carboxylic groups of well-established methacrylic copolymers, namely Eudragit®L100 and Eudragit®S100 (XPMM).

The flexibility of application of these materials has been demonstrated preparing buccoadhesive tablets and mucoadhesive microparticulate delivery systems containing nifedipine or piroxicam.

The compliance as well as the in vivo permanence time of the mucoadhesive tablets has been considered satisfactory.

The preparation of microparticles by spray-drying improved the apparent solubility and the dissolution rate of the loaded drugs.



### 1. Description of the product

Buccoadhesive drug delivery systems have been designed to prolong the drug residence time in the oral cavity. The commonly used mucoadhesive materials swell upon contact with aqueous media and the outer viscous layer compromises patients' compliance.

It has been demonstrated that new low-swellable mucoadhesive materials can be achieved by neutralization of pharmaceutical approved methacrylic copolymers with alkali.

The versatility of these polymethylmethacrylate salts was successfully exploited to design tablets, patches and fast-dissolving microparticulate systems. Their dissolution rate and adhesive mechanisms of these materials can be easily modified by addition of other excipients.

### 2. Innovative aspect of the product

The innovation of this product consists on conferring mucoadhesive properties to pharmaceutical approved polymethylmethacrylate by neutralization with alkali, without requiring a characterization with regards to the regulatory aspects.

### 3. Main advantages of the offer

These novel mucoadhesive polymers are promising materials to develop a platform able to meet different needs in the formulation of mucoadhesive dosage forms.

#### 4. Technology key words

Mucoadhesive material, polymethylmethacrylate salts, microparticulate system, buccal patches.

#### 5. Current Stage of Development

Work in progress – Tested in field

#### 6. Intellectual Property Rights

The product of the research is covered by patent.

### Technical and scientific publications

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