LUBRIZOL LIFE SCIENCE

Mucoadhesion with Carbopol® Polymers

Mucoadhesion is a type of bioadhesion in which two materials, at least one of which is mucosal, are held together for extended periods by interfacial forces.

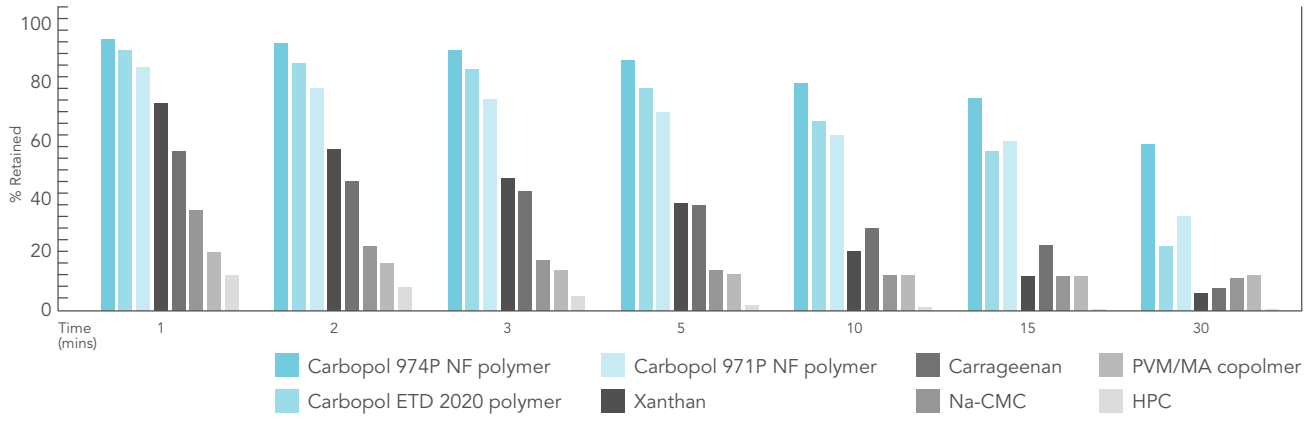
To successfully achieve mucoadhesion in pharmaceutical products, the choice of excipient in your formulation is key.

Lubrizol's Carbopol® polymers are high quality excipients offering superior mucoadhesive performance when compared to other polymers. Our in vitro study data demonstrates that Carbopol® polymers provide longer retention times on mucosa versus other polymers (Figure 1).

Benefits of Mucoadhesive Formulations Containing Carbopol® Polymers:

- Can provide longer, enhanced retention of active ingredients at the target site
- Lubricate mucosal tissue in a variety of dosage forms (e.g., mouthwash for dry mouth, lozenge for sore throat)
- Allow for formulation flexibility by offering multiple available polymer grades
- Can instill muco-protective capabilities to a formulation (e.g., a canker sore cover)
- Offer a new opportunity for product claim differentiation

Figure. 1. Retention of aqueous dispersion made from various materials (1.0 weight percent)



Applicable Dosage Forms:

- Topical gels and creams (for vaginal, ocular, rectal, oral, nasal, etc.)
- Oral solutions and suspensions
- Eye drops
- Nasal sprays
- Lozenges and buccal tablets or films
- Toothpastes and mouthwashes
- Any other innovative formats for mucosal administration

Available Case Studies:

- Mouthwash formulations with and without Carbopol® polymers
- Oral care formulations containing Sanqi extract (traditional Chinese medicine)
- Liquid cold and cough formulation
- Vaginal gel formulation improvement
- Mucoadhesion enhancement of films containing Carbopol® polymers

The possibilities are endless

Contact us to learn more.
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