

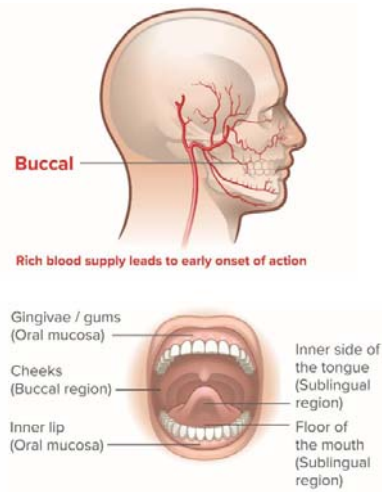
Mucofilm® Technology opens up new possibilities for drugs with low bioavailability

Buccal delivery of a drug via thin films has the potential to

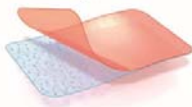
- Improve the action of drug
- Lower the dosing
- Enhance the efficacy and safety profile

Buccal administration via Mucofilm® opens new possibilities for drugs with low bioavailability

- Early onset of action
- Avoidance of gastrointestinal drug degradation
- Bypasses first-pass metabolism

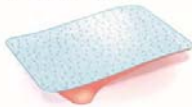


Double layer film



- Unidirectional route into buccal mucosa area
- Bio-compatible backing
- API containing matrix

Double layer film

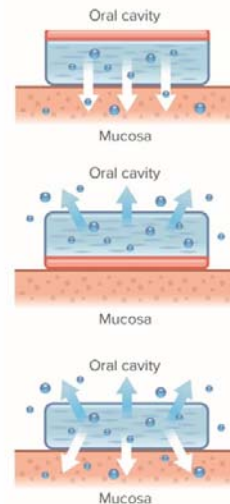


- Unidirectional route into oral cavity and for mucosal area
- API containing dissolvable matrix
- Slow dissolving mucoadhesive backing

Single layer



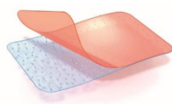
- Bidirectional route for sublingual / buccal application
- Bio-compatible backing
- API containing matrix



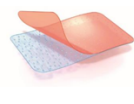
Mucofilm® Technical Facts

also known as buccal film, mucoadhesive film, mucosal film

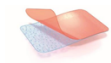
Typical components of our Mucofilm®



Area: 6 - 8 cm²
API content: 50-100 mg



Area: 3 - 6 cm²
API content: 1 - 50 mg



Area: 1 - 3 cm²
API content: 0,5 - 10 mg

Water/ethanol based drug dispersion in hydrophilic polymers

- Polymers
 - Polyvinyl alcohol (PVA)
 - Polyvinyl pyrrolidone (PVP/Kollidon)
 - Cellulose and derivatives
 - Starch and derivatives
 - Polyacrylic acid (Carbopol)
 - Alginates
- Plasticizers
 - Residual water and ethanol
 - Glycerol
 - Polyethylene oxide (PEO/PEG)
 - Propylene glycol
- (Fillers/Flavours/Taste Masking)
- Process Temperatures
 - 50 - 120°C