

dental  
bone & tissue  
regeneration

botiss  
biomaterials

# muco<sup>®</sup>derm<sup>®</sup>

## 3D-Regenerative Tissue Graft

*strictly biologic*

mucoderm<sup>®</sup> is a collagen tissue matrix derived of animal dermis that passes through a multi-step cleaning process, which removes all potential tissue rejection components from the dermis. This results into a 3-dimensional stable matrix consisting of collagen and elastin. mucoderm<sup>®</sup> supports revascularization and fast soft tissue integration and is a valid alternative for patients own connective tissue.

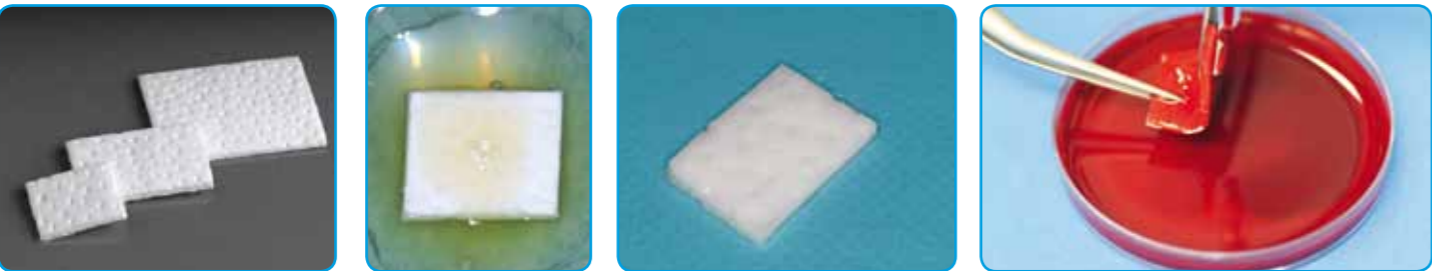
After placement, the patient's blood infiltrates the mucoderm<sup>®</sup> graft through the 3-dimensional soft tissue network, bringing host cells to the soft tissue graft surface and starting the revascularization process. Significant revascularization can begin after implantation depending on the patient's healthy structure.

Natural 3D collagen structure

mucoderm<sup>®</sup> matrix is made of pure collagen without cross-linking or chemical treatment. SEM pictures of mucoderm<sup>®</sup> show its rough and open-porous collagen structure that guide soft-tissue cells and blood vessels.

Handling

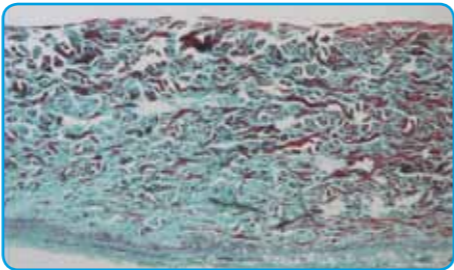
Prior to clinical use mucoderm<sup>®</sup> has to be rehydrated in sterile saline or blood for 3-15 min (depending on graft size and desired flexibility of the graft). After rehydration it can be trimmed to the desired size with a scalpel or scissors.



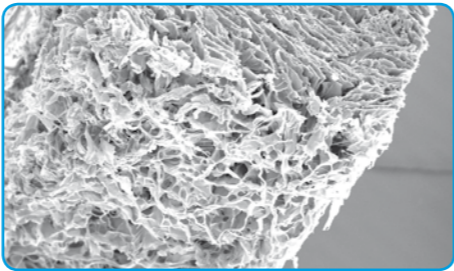
Perfect handling of mucoderm<sup>®</sup> following rehydration with steril saline or blood

Properties & Advantages

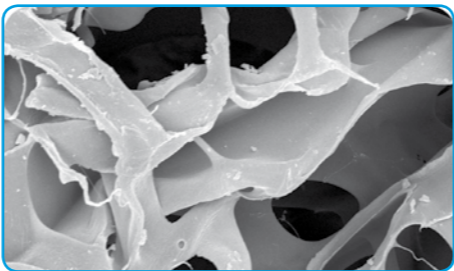
- 100% natural collagen matrix
- rapid vascularization and integration
- soft tissue replacement without palatal autograft harvesting
- complete remodeling into patients own tissue
- malleable (wet and dry)
- rapid rehydration
- easy handling (application and fixation)
- thickness 1.2 - 1.7 mm
- resorption time 6 -12 months



mucoderm<sup>®</sup> histology after 3 month;  
good revascularization



SEM of mucoderm<sup>®</sup>



SEM of mucoderm<sup>®</sup>

Indications

Implantology, Periodontology, Oral and CMF surgery

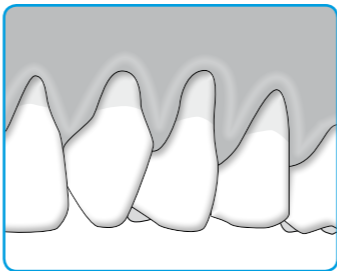
- Soft tissue augmentation/ thickening
- covering of implants placed in immediate or delayed extraction sockets
- localized ridge augmentation for later implantation
- alveolar ridge reconstruction for prosthetic treatment
- guided tissue regeneration procedures in periodontal and soft tissue recession defects

Product Specifications

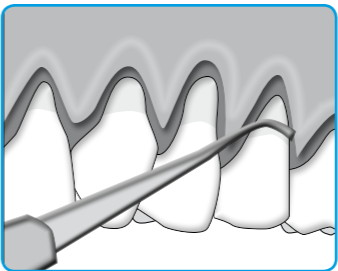
mucoderm <sup>®</sup>		
Article No.	Size	Content
701520	15x20mm	1 piece
702030	20x30mm	1 piece
703040	30x40mm	1 piece

Clinical Application

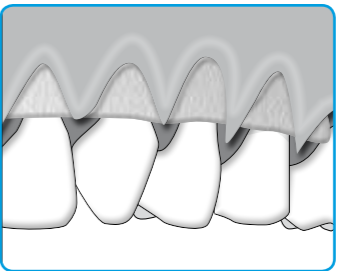
Tunnel technique



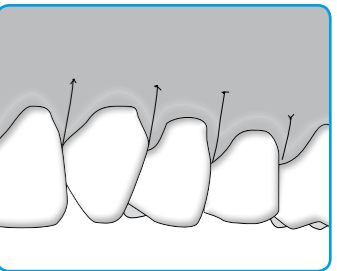
Clinical few of root recession before mucoderm<sup>®</sup> placement



Papillary incisions approximately 3mm apical to the tip of the papilla

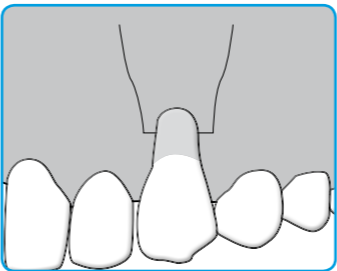


mucoderm<sup>®</sup> is inserted under the intact papilla

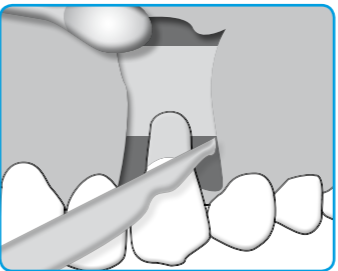


Flap positioned completely over the graft and hold in place with individual sling sutures

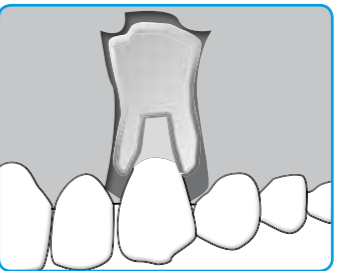
Coronally advanced flap



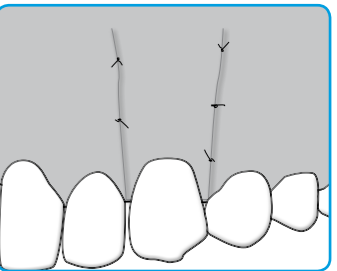
Clinical few of root recession before mucoderm<sup>®</sup> placement



Preparation of a coronally advanced flap by a sulcular and two vertical releasing incisions



mucoderm<sup>®</sup> cut to shape and placed over the tooth root



Gingival tissue coronally repositioned, covering mucoderm<sup>®</sup> and sutured in place

# Clinical Applications

Soft tissue augmentation/thickening: **Dr. Tiziano Testori**, Como



Second stage surgery to uncover 3 implants in the lower left mandibular quadrant



Partial thickness flap and mucoderm® anchored to the periosteum to thicken soft tissue



Flaps sutured leaving inter-implant periosteum exposed to heal by secondary intention



1 year post-op; an adequate quantity of keratinized tissue is present

Root recession: **PD Dr. Stefan Hägewald**, Berlin



Clinical situation of the root recession before mucoderm® placement



mucoderm® placement over the tooth root



Gingival tissue was coronally repositioned, covering mucoderm® and roots of teeth and sutured in place



6 months post-op; previously recessed roots are covered with attached pink, keratinized gingival tissue

Root coverage „Tunnel technique“: **Dr. Ziv Mazor**, Ra'anana



Clinical situation before surgery



mucoderm® placement by tunnel technique



Clinical situation after 3 months



3 years follow up clinical situation

Ridge augmentation: **Dr. Krzysztof Chmielewski**, Gdansk



Clinical situation before block surgery



maxgraft® block fixation



maxgraft® block covered with cerabone® and protected by mucoderm®



Final suturing and closing

# Case Reports

**Dr. Krzysztof Chmielewski**, Gdansk/Poland

## Vestibular augmentation of soft tissue with mucoderm®



Initial situation showing vestibular recession of soft tissue; crowns 12 and 13 are temporary and screw retained on implants



Checking the position of the implant in aesthetic window



Splitting of the flap, periosteum is left on the bone; implant margin is visible due to marginal resorption of the bone



Checking the fitting of prepared shape of the mucoderm®



Stabilization and suturing of mucoderm® with resorbable sutures 5-0 (PGA)



Matrix mucoderm® placed in final position and stabilized with PGA sutures



Final tension free flap closure with nonresorbable monofilament sutures 6-0



Healing of soft tissue after 3 weeks from surgery

# Case Reports

Dr. Krzysztof Chmielewski, Gdansk/Poland

## Recession coverage with mucoderm® instead of free subepithelial graft of soft tissue



Initial situation: recession of soft tissue and premolars roots exposure



Removing of temporary screw retained crown placed on implant in canine position



Cleaning of the teeth Surface



Preparation and conditioning of the roots surface with antibiotic (Doxycycline)



Split flap technique with one distal releasing incision



Flap mobility check



Collagen matrix mucoderm® replacing subepithelial soft tissue graft stabilized with PGA sutures



mucoderm® is very fast infiltrated with blood and is adapted to the recipient site



Situation after tension free flap closure and temporary crown instalation in canine position



Healing after 2 weeks from surgery and sutures removal



Healing after 2 months from surgery



Healing after 4 months from surgery

Dr. Krzysztof Chmielewski, Gdansk/Poland

## Tunnel technique recession coverage with mucoderm®



Initial situation with recession present on first left premolar



Cleaning of the root surface with cleaning paste



Preparation and conditioning of the root surface with antibiotic (Doxycycline)



Tunnel preparation with microsurgical instruments



Splitting of the flap and preparation of the internal envelope



Checking of the mobility of the flap before mucoderm® placement



Checking of the mobility of the flap before mucoderm® placement with coronal positioning



Trimming of the mucoderm® before placement in to the tunnel



mucoderm® in situ before soft tissue positioning



Stabilization of the soft tissue with sutures; mucoderm® should be always covered with soft tissue



Healing after 7 days



Healing after 7 weeks

botiss dental GmbH  
Knesebeckstrasse 59-61  
10719 Berlin / Germany  
Fon +49 30 20 60 73 98 30  
Fax +49 30 20 60 73 98 20  
[contact@botiss.com](mailto:contact@botiss.com)  
[www.botiss.com](http://www.botiss.com)  
facebook: biomaterials  
skype: botissbiomaterials

botiss  
biomaterials