



OsteoBiol[®]
by Tecnos

Evolution

THE NATURAL EVOLUTION
OF COLLAGEN MEMBRANES

Heterologous pericardium

REGENERATION SCIENCE

INSPIRED BY NATURE



A unique biotechnology

TECNOSS®: A UNIQUE PROCESS THAT ACCELERATES AND GUIDES NATURAL BONE REGENERATION

Tecnoss® developed and patented a unique biotechnology that prevents the ceramization phase of natural bone and preserves the tissue collagen, allowing an osteoclastic-type remodelling of the biomaterial similar to physiological bone turnover and delivering a product endowed with characteristics very similar to human mineral bone⁽¹⁾.

The combination of these factors allows a consistent new bone formation and a close contact between neo-formed bone and biomaterial granules.

COLLAGEN: A KEY FACTOR FOR BONE REGENERATION

Collagen has a key role in bone regeneration process in that:

- it acts as a valid substrate for platelet activation and aggregation
- it serves to attract and differentiate the mesenchymal stem cells present in the bone marrow⁽²⁾
- it increases the proliferation rate of the osteoblasts up to 2/3 times⁽³⁾
- it stimulates the activation of the platelets, osteoblasts and osteoclasts in the tissue healing process

OSTEOBIOL®: UNIQUE COLLAGENATED BIOMATERIALS

Thanks to the innovative Tecnoss® technology, the OsteoBiol® line has the following important characteristics:

- 1) absence of a foreign body response
- 2) gradual resorption over time⁽⁴⁾
- 3) stimulation/acceleration of physiological tissue healing process
- 4) protection of the grafting site from infection (membranes)

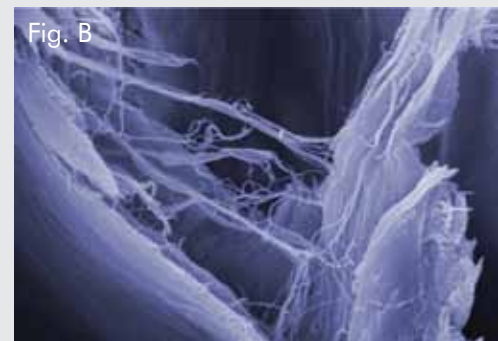
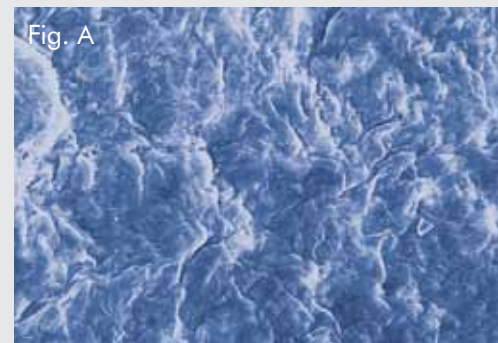
The Tecnoss® new generation of biomaterials, thanks to a revolutionary technology, goes beyond the simple role of aiding natural bone regrowth by stimulating and accelerating this vital physiological process.

Fig. A – SEM image of an OsteoBiol® Evolution membrane. Courtesy of Dr. JL Calvo Guirado, Murcia, Spain

Fig. B – OsteoBiol® membrane collagenic structure. Courtesy of Nobil Bio Ricerche, Villafranca d'Asti, (AT) Italy

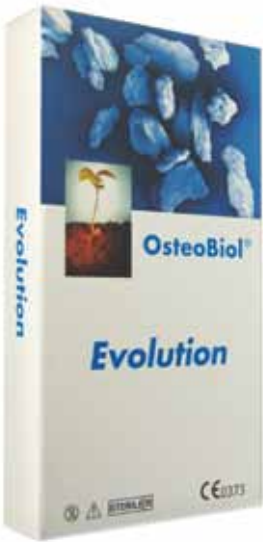
Fig. C – OsteoBiol® Evolution membrane Standard thickness

OsteoBiol®
by Tecnoss





The natural evolution of collagen membranes



CHARACTERISTICS

Obtained from mesenchymal tissue (heterologous pericardium) the Evolution membrane is completely resorbable. Its structure is made of dense collagen fibers of high consistency and of extraordinary resistance.

HANDLING

Membrane can be shaped with sterile scissors until the desired size is reached; it must then be rehydrated with lukewarm physiological solution. Once it acquires the desired plasticity, it must be adapted to the grafting site. In case of accidental exposure, the dense collagenic matrix of Evolution

protects the graft from infection.

CLINICAL INDICATIONS OVERVIEW

Experimental studies have shown histological evidence of the prolonged barrier effect of this membrane, which lasts at least eight weeks⁽⁴⁾.

The dense collagenic matrix of Evolution protects the graft from infection in case of accidental exposure: the membrane itself will also not be infected, allowing second intention healing.

This property is particularly important in case of regeneration of large posterior sockets, when flaps cannot completely cover the graft⁽⁵⁾.

In lateral access sinus lift Evolution membranes are indicated to cover antrostomy (Standard model)^(6,7,8) and to protect the sinus membrane from cutting risk due to graft pressure (Fine model).

Evolution is also ideal to protect peri-implant regenerations⁽⁹⁾ and periodontal grafts. Finally Evolution Fine has been successfully used in combination with OsteoBiol® Gel 40 for the treatment of gingival recessions⁽¹⁰⁾.

Tissue of origin

Heterologous pericardium

Tissue collagen

Preserved

Physical form

Dried membrane with one smooth side and one micro-rough side

Composition

100% pericardium

Thickness

Fine: 0.4mm (+/-0.1mm)

Standard: 0.6mm (+/-0.1mm)

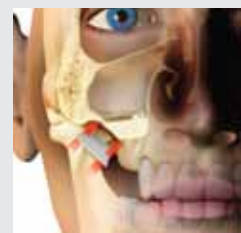
Estimated resorption time

Fine: about 3 months

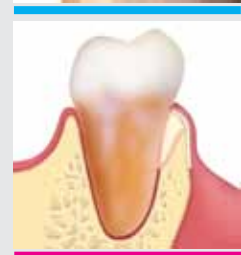
Standard: about 4 months

Packaging

20x20mm, 30x30mm, 25x35mm (oval)



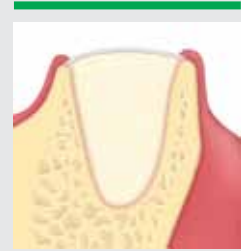
MAXILLARY SINUS FLOOR AUGMENTATION



INTRABONY DEFECTS



PERI-IMPLANT DEFECTS



POST EXTRACTIVE SOCKETS

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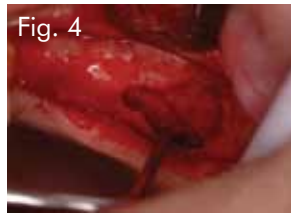
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Excellent clinical performances



CASE REPORT

CRESTAL ACCESS SINUS LIFT

Severe crestal atrophy rehabilitated with maxillary sinus lift

Sex: **Female** | Age: **70**

Fig. 1 Pre-operative endoral x-ray showing a severe crestal atrophy and a wide pneumatization of maxillary sinus

Fig. 2 Initial intraoral image: view of bone defect in coronal-apical sense

Fig. 3 View of bone defect in buccal lingual sense

Fig. 4 The residual crest thickness of 2 mm only prevented lateral access sinus lift procedure. A window crestal approach was chosen. Image showing the sinus membrane dissection

Fig. 5 Intra-operative image showing the defect filled with OsteoBiol® mp3

Fig. 6 The grafted biomaterial was perfectly stabilized with blood clot

Fig. 7 The graft was covered and protected with a properly shaped OsteoBiol® Evolution membrane

Fig. 8 Flap suture

Fig. 9 Control endoral x-ray immediately after surgery: it is possible to appreciate a bone defect filling of 11mm

Fig. 10 Intraoral image after 6 months from grafting

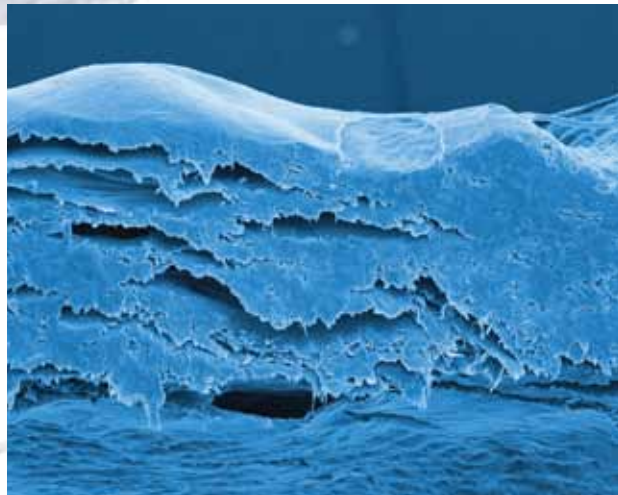
Fig. 11 Coronal-apical view showing the good rehabilitation of crestal bone defect

Fig. 12 Control endoral x-ray after 36 months from surgery showing the implants placed in regenerated bone

Documentation provided by
Dr Roberto Rossi
M.Sc.D. in Periodontology, Genova, Italy
e-mail: drrossi@mac.it

Membrane: **OsteoBiol® Evolution**

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SEM image showing collagenic matrix of OsteoBio® Evolution. Courtesy of Dr Ulf Nannmark, Göteborg University.

Evolution

THE NATURAL EVOLUTION OF COLLAGEN MEMBRANES

Heterologous pericardium



Tecnoss s.r.l. is an innovative, globally active company that develops, produces and documents premium-quality xenogenic biomaterials by the brands Tecnoss® and OsteoBiol®.

Its 15 years of research led to its patent-protected production process that ensures neutralization of antigenic components in order to achieve biocompatibility, while preserving the natural collagen matrix inside the biomaterial.

Tecnoss® products comply with highest quality standards such as ISO13485 (notified body TÜV Rheinland), 93/42/EC (amended by 2007/47/EEC) and 03/32/EC (notified body CE 0373).

www.osteobiol.com

Tecnoss® Dental

Via Torino, 23
10044 Pianezza (TO) - Italy
Tel +39 011 9682823
Fax +39 011 9787087
info@tecnoss-dental.com

www.osteobiol.com

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