



OsteoBiol[®]
by Tecnos

Lamina

A UNIQUE CORTICAL BONE BARRIER
Heterologous cortical collagenated bone

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.

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 Tecness® technology, the OsteoBiol® line has the following important characteristics:

- absence of a foreign body response⁽⁴⁾
- gradual resorption over time^(5,6)
- stimulation/acceleration of physiological tissue healing process⁽²⁾
- protection of the grafting site from infection (membranes)⁽⁷⁾
- capability of carrying medication to the surgical site⁽⁸⁾

The Tecness® 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.

OsteoBiol®
by Tecness

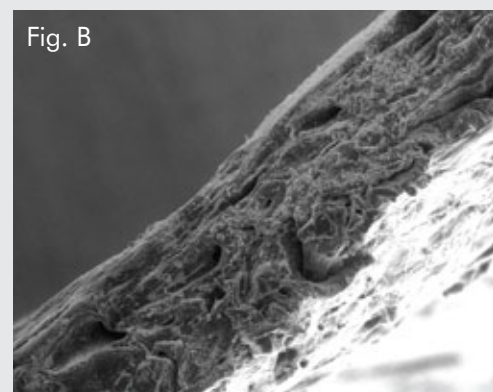
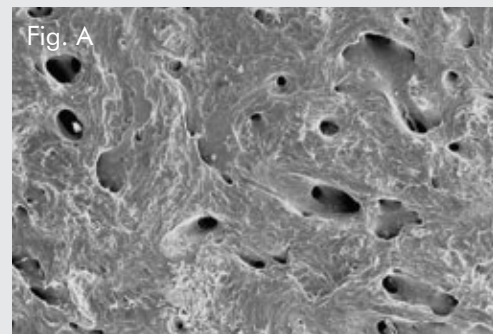


Fig. A – SEM image of an OsteoBiol® Lamina. Courtesy of Dr. JL Calvo Guirado, Murcia, Spain

Fig. B – SEM image of an OsteoBiol® Lamina. Courtesy of Politecnico di Torino, Italy

Fig. C – OsteoBiol® Curved Lamina

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A unique cortical bone barrier



CHARACTERISTICS

OsteoBiol® *Cortical Lamina* is made of cortical bone of heterologous origin produced with an exclusive TecnoSS® process that avoids the ceramization of hydroxyapatite crystals, thus accelerating physiological resorption. After a process of superficial decalcification, it acquires an elastic consistency, nevertheless maintaining the typical compactness of the bone tissue from which it originates; the margins are soft in order not to cause micro traumas to the surrounding tissues.

OsteoBiol® *Curved Lamina* has a semi-rigid consistency and can be grafted without hydration, provided that it is previously shaped to fit the defect morphology.

HANDLING

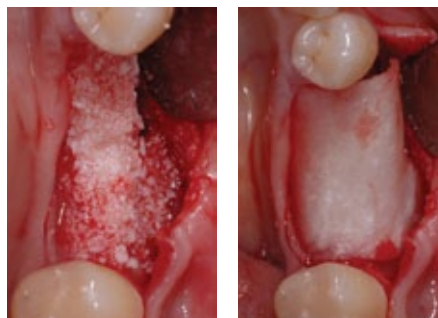
OsteoBiol® *Cortical Lamina* can be shaped with sterile scissors until the desired size is reached, then it must be hydrated for 5/10 minutes in sterile physiological solution.

Once it acquires the desired plasticity, it must be adapted to the grafting site; it should always be immobilized either with titanium microscrews or sutured (Fine model) directly to the surrounding tissues with a triangular section non-traumatic needle.

OsteoBiol® *Curved Lamina* should not be hydrated but can also be shaped with sterile scissors, and must be fixated with osteosynthesis screws. In case of exposure, *Lamina* should only be removed if there is a clear suprainfection, because its consistency is such as to allow it to achieve a complete second intention healing of the wound.

CLINICAL INDICATIONS OVERVIEW

The characteristics of the OsteoBiol® *Lamina* are particularly useful when it is necessary to obtain a space making effect in aesthetic areas⁽⁹⁾, as well as in horizontal augmentation⁽¹⁰⁾ of two wall defects and antrostomy covering in lateral access sinus lift procedures^(11,12). *Lamina* can also be used for orbital floor restoration^(13,14) and is particularly indicated in association with OsteoBiol® *mp3* for regeneration of ridges with compromised cortical plate.



Horizontal defect treated with OsteoBiol® *Lamina* and *mp3*

Source: Courtesy of Dr Roberto Rossi, Genova, Italy

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Tissue of origin
Cortical bone

Tissue collagen
Preserved

Physical form
Semi-rigid dried lamina, flexible after re-hydration

Composition
100% cortical bone

Thickness
Fine: 0.5 mm (±0.1 mm)
Medium Curved: 1.0 mm (±0.1 mm)
Standard: 3 mm (±1 mm)

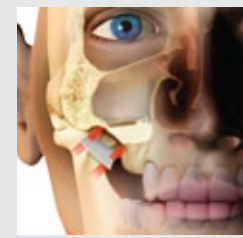
Estimated re-entry time
Fine: about 5 months
Medium Curved: about 6 months
Standard: about 8 months

Packaging
Fine: 25x25 mm, 25x35 mm (oval)
Medium Curved: 35x35 mm
Standard: 30x30 mm

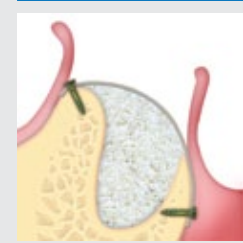
Product codes

LS25FS	25x25 mm	Fine	Porcine
LS25FE	25x25 mm	Fine	Equine
LS23FS	25x35 mm (oval)	Fine	Porcine
LS23FE	25x35 mm (oval)	Fine	Equine
LS10HS	35x35 mm	Curved	Porcine
LS10HE	35x35 mm	Curved	Equine
LS03SS	30x30 mm	Standard	Porcine

GMDN code
38746



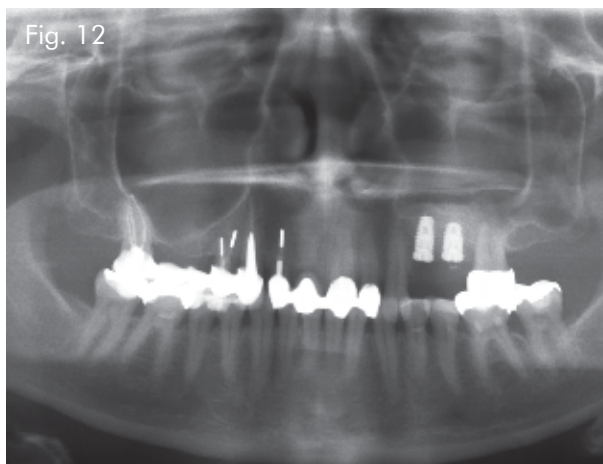
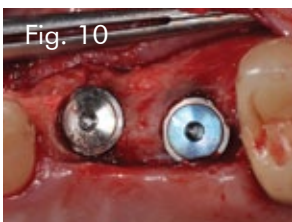
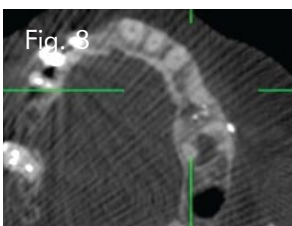
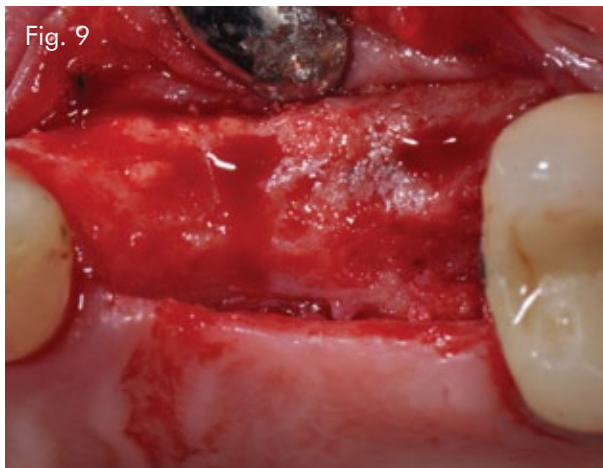
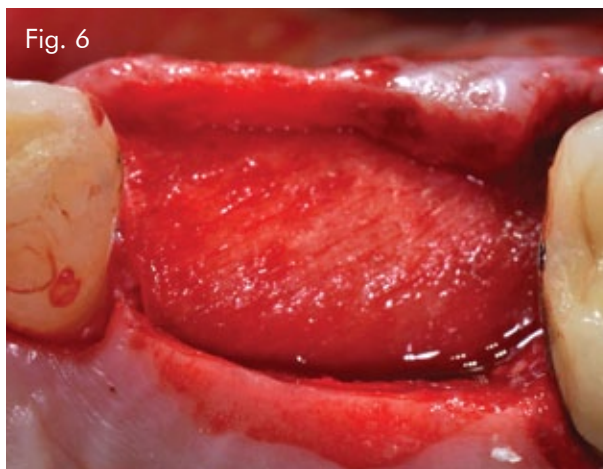
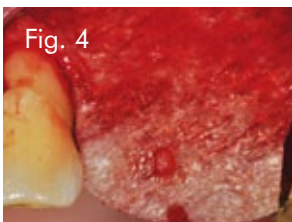
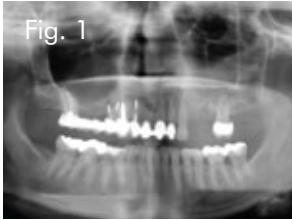
**LATERAL ACCESS
SINUS LIFT**



**HORIZONTAL
AUGMENTATION**



Excellent clinical performances



CASE REPORT

HORIZONTAL AUGMENTATION

Horizontal defect grafted with OsteoBiol® Lamina and mp3

Sex: **Female** | Age: **45**

Fig. 1 Pre-operative orthopantomogram

Fig. 2 Alveolar ridge presenting an inadequate width for implant placement

Fig. 3 Intraoperative view demonstrating the alveolar defect

Fig. 4 Fixation of OsteoBiol® Lamina with titanium pins

Fig. 5 Reconstruction of the alveolar ridge with bone substitute (OsteoBiol® mp3)

Fig. 6 Covering the augmented area with the OsteoBiol® Lamina

Fig. 7 Primary flap closure achieved

Fig. 8 Digital volumetomograph 6 months after augmentation procedure, demonstrating the amount of new bone

Fig. 9 Intraoperative view of the augmented area 6 months after augmentation procedure

Fig. 10 Placement of 2 implants

Fig. 11 Final prosthetic reconstruction

Fig. 12 Post-operative radiograph

Documentation provided by

Prof Dr **Hannes Wachtel**

Dr **Tobias Thalmair**

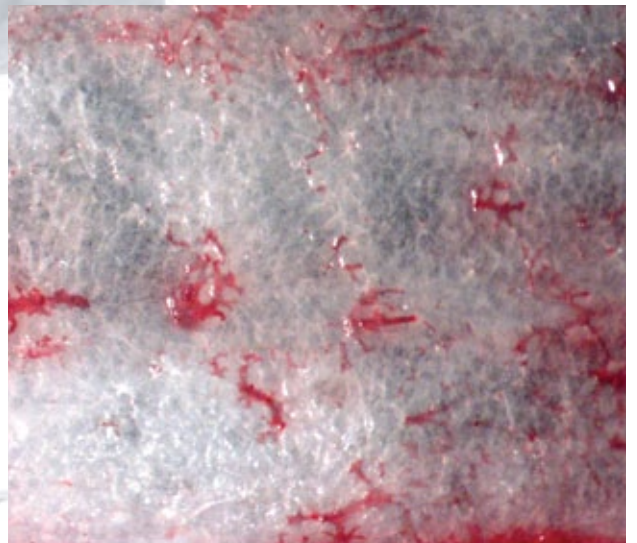
Private Institute for Periodontology and Implantology, Munich, Germany

Email: hannes@wachtel.biz

Barrier - Bone substitute: **OsteoBiol® Lamina**

Bone substitute: **OsteoBiol® mp3®**

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LM image of an OsteoBioL® Lamina hydrated with blood: vascularisation enhanced by the presence of the original vascular canals. Courtesy of Prof Ulf Nannmark, Göteborg University, Sweden.

Lamina

A UNIQUE CORTICAL BONE BARRIER

Heterologous cortical collagenated bone



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

Its 20 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.

Tecnos® products comply with highest quality standards such as ISO 10993, ISO 13485 (notified body Kiwa Cermet) and 93/42/EC (notified body CE 0373).

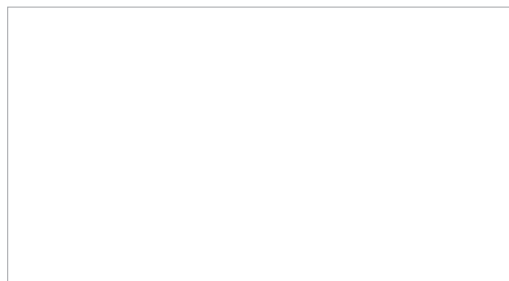
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