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 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.

Tecnoss® products comply with highest quality standards such as ISO 10993, ISO 13485 and 93/42/EC.

GTO®
Collagenated heterologous cortico-cancellous bone mix + TSV Gel
Made in Italy

THE NEW STANDARD OF EXCELLENCE IN BIOMATERIALS
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REGENERATION SCIENCE

OsteoBiol®
by Tecnoss

GTO®
THE NEW STANDARD OF EXCELLENCE IN BIOMATERIALS
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REG ENER ATION SCIENCE

INSPIRED BY NATURE
TECNOSS®: A UNIQUE PROCESS THAT PROMOTES 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 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:

a) it acts as a valid substrate for platelet activation and aggregation
b) it serves to attract and differentiate the mesenchymal stem cells present in the bone marrow into osteoblasts(2,3,4)
c) it increases the differentiation rate and activity of osteoblasts, if compared to bone marrow cells cultured on conventional culture dishes(5)
d) it stimulates the activation of the platelets, osteoblasts and osteoclasts in the tissue healing process
e) it promotes new vessels formation and therefore graft vascularization(6)

OSTEOBIOL® DUAL-PHASE BONE MATRIX + TSV GEL: 
A UNIQUE COMBINATION FOR GRAFT STABILIZATION

Thanks to its innovative composition, OsteoBiol® TSV Gel can provide mechanical stability to OsteoBiol® GTO® granules during the grafting procedure. OsteoBiol® TSV Gel is then rapidly resorbed and does not influence the natural regenerative process.

At room and body temperature OsteoBiol® TSV Gel is gel-like: it does not harden but keeps a soft consistency that allows a stable sticky mixture with OsteoBiol® GTO® granules.
**CHARACTERISTICS**

OsteoBiol® GTO® is a bone grafting material of heterologous origin. It is a mix of collagenated cortico-cancellous granules with a granulometry ranging from 600 to 1000 µm, properly mixed with OsteoBiol® TSV Gel, which is a mixture of heterologous type I and III collagen gel with polyunsaturated fat acids and a biocompatible synthetic copolymer diluted in aqueous solution. OsteoBiol® GTO® is gradually resorbed and is extremely osteoconductive. Moreover, the granules’ preserved collagen matrix facilitates blood clotting and the subsequent invasion of repairing and regenerative cells. These unique properties allow an excellent rate of new bone formation, delivering adequate graft volume preservation, a healthy new bony tissue and ultimately, a successful implant rehabilitation.

**HANDLING**

Available in two sizes (0.5 and 2.0 cc), OsteoBiol® GTO® is a ready-to-use pre-hydrated biomaterial and can be easily grafted to the defect site, directly injected from the sterile syringe. In this way, clinicians can skip the hydration phase with saline or blood, saving time and decreasing the risk of accidental exposure to pathogens.

The presence of OsteoBiol® TSV Gel ensures the optimal stickiness of the material, which is also easily adaptable to the recipient site and extremely stable.

**CLINICAL INDICATIONS OVERVIEW**

OsteoBiol® GTO® has been conceived as a universal biomaterial, easily adaptable to any bone defect, in association with OsteoBiol® Evolution membranes or OsteoBiol® Lamina to protect the graft. Nonetheless, thanks to its stickiness, it is particularly indicated for horizontal augmentation procedures (e.g. two-walls defects, when the crest is resorbed) and for socket preservation cases with compromised buccal plate.

During sinus lifting, OsteoBiol® GTO® can be directly applied through the bony window, helping the stabilization of implants in case of immediate placement. OsteoBiol® GTO® can also be successfully used to treat peri-implant lesions and severe intrabony defects.
**Excellent graft stabilization**

**CASE REPORT**

**Horizontal augmentation**

| Fig. 1 | Severe crestal resorption - lateral view |
| Fig. 2 | Severe crestal resorption - anterior view |
| Fig. 3 | CBCT scan showing the extremely resorbed knife-edge crest |
| Fig. 4-5 | Crestal width 2 mm |
| Fig. 6 | The crestal bone is perforated to stimulate blood flow into the graft |
| Fig. 7-8 | The application of OsteoBiol® GTO® results in horizontal ridge augmentation |
| Fig. 9 | Application of OsteoBiol® Lamina before suturing |
| Fig. 10 | Healed tissues after 9 months. Crestal width 5.5 mm |
| Fig. 11 | X-ray taken after 12 months showing well integrated implants. Implants Ø 3.5 mm |
| Fig. 12 | Final prosthetic restoration |

**Document**: 12/15/2016 | **Location**: Paris, France

**Case report**

**Case report**

**Figure 1**: Severely resorbed crest - lateral view

**Figure 2**: Severely resorbed crest - anterior view

**Figure 3**: CBCT scan showing the extremely resorbed knife-edge crest

**Figure 4-5**: Crestal width 2 mm

**Figure 6**: The crestal bone is perforated to stimulate blood flow into the graft

**Figure 7-8**: The application of OsteoBiol® GTO® results in horizontal ridge augmentation

**Figure 9**: Application of OsteoBiol® Lamina before suturing

**Figure 10**: Healed tissues after 9 months. Crestal width 5.5 mm

**Figure 11**: X-ray taken after 12 months showing well integrated implants. Implants Ø 3.5 mm

**Figure 12**: Final prosthetic restoration

**Bone substitute**: OsteoBiol® GTO®

**Barrier**: OsteoBiol® Lamina

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CASE REPORT

Treatment of Posterior Maxilla Sinus Elevation

Sex: female | Age: 70

Fig. 1 Severe atrophic maxilla requiring a sinus lift procedure
Fig. 2 Osteotomy and elevation of the Schneiderian membrane
Fig. 3 Augmentation of the sinus floor using OsteoBiol® GTO®
Fig. 4 The augmented site is ready for immediate implant placement
Fig. 5 Compaction of OsteoBiol® GTO® into the sinus and around the implants
Fig. 6 View of the grafted sinus
Fig. 7 Placement of the healing abutments 4 months later
Fig. 8 Sutures, occlusal view
Fig. 9-10 Biopsies from upper jaw region retrieved at four months
Fig. 11-12 Histologies at higher magnification: osteocytes in the lacunae can be observed

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Bone substitute: OsteoBiol® GTO®
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