



OsteoBiol[®]
by Tecnos

Putty

ENGINEERED FOR PERI-IMPLANT DEFECTS

Pre-hydrated collagenated heterologous cortico-cancellous bone paste

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 and a consequent improvement of the contact area around implants^(A).

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

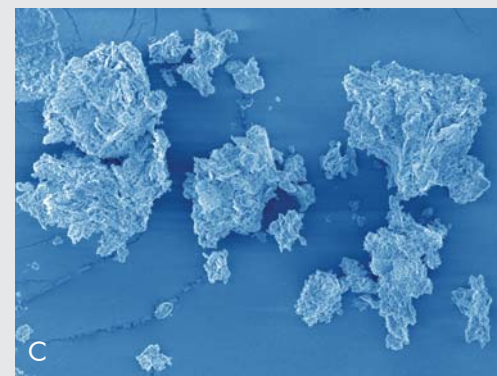
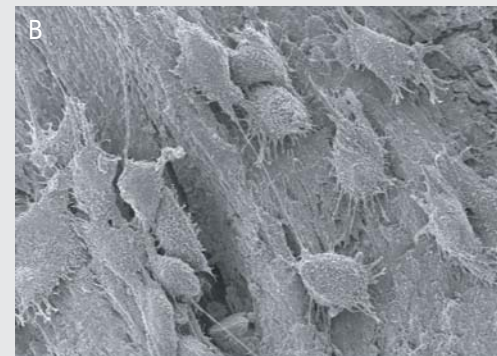
OSTEOBIOL®: UNIQUE COLLAGENATED BIOMATERIALS

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

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

The Tecnos® 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 Tecnos



A | Image showing bone formation on implant surface at 5 weeks on rabbit. Right side grafted with OsteoBiol® Putty. Left side left to self natural healing. Staining hematoxyline-eosine. Courtesy of Dr U Nannmark, University of Göteborg, Sweden

B | SEM image of an OsteoBiol® bone matrix colonized by osteoblasts from a cell-line (MG63). Courtesy of Dr U Nannmark, University of Göteborg, Sweden

C | SEM image showing the mixed sizes OsteoBiol® Putty particles, granulometry of up to 300 microns. Courtesy of Dr U Nannmark, University of Göteborg, Sweden

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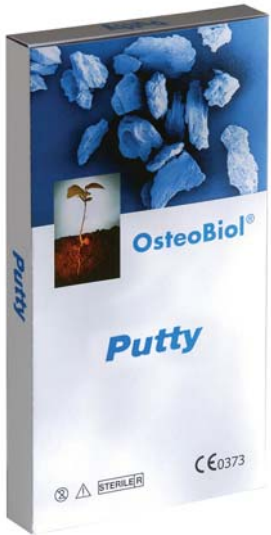
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Engineered for peri-implant defects



Putty is a collagenated bone paste composed by 80% micronized cortico-cancellous granules (<300 microns) mixed with 20% collagen gel.

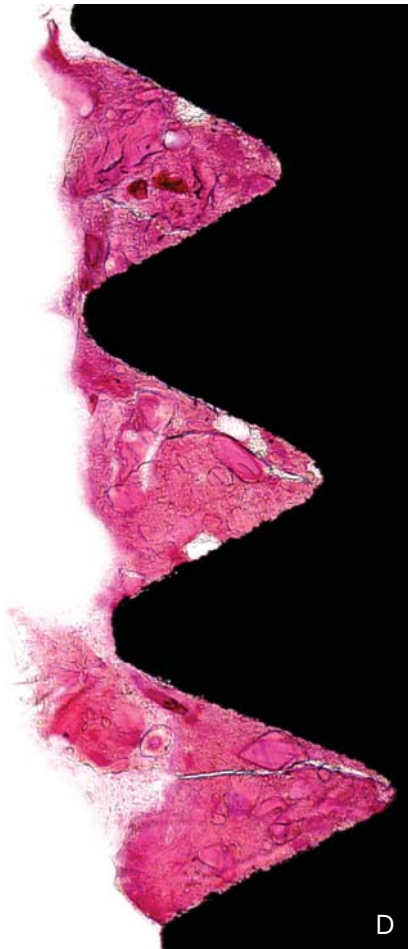
The exclusive Tecnos[®] manufacturing process guarantees an exceptional **malleability** and **plasticity**; furthermore the **new syringe packaging** gives Putty **extraordinary handling properties** making this product the ideal choice for post-extractive sockets, self-contained peri-implant defects and all defects that present a self-contained cavity.

Thanks to the **collagen component**, Putty facilitates blood clotting and the subsequent invasion of repairing and regenerative cells.

Furthermore, the Tecnos[®] manufacturing process avoids granules ceramization, allowing a **progressive resorption**⁽⁴⁾ of the biomaterial and, at the same time, a **significant new-bone formation** rate⁽⁵⁾. Putty's "soft" consistency also guarantees an easy and healthy soft-tissues healing.

Thanks to these unique characteristics, Putty is particularly indicated for **peri-implant defects** regeneration: following immediate post-extractive implants placement, Putty can be injected between the defect walls and the implant, guaranteeing a **perfect filling** of the entire defect volume.

The product versatility also makes Putty the ideal solution when bone tissue has been lost due to **peri-implant lesions** as long as the containing walls are present. In fact, the primary condition for gaining a **successful regeneration** is to achieve the biomaterial initial stability. Therefore, Putty must be used only in self contained defects where the surrounding walls guarantee this condition: for example **post-extractive sockets**⁽⁶⁾ and inside the bone crest when **ridge-split technique**^(7,8) is adopted.



D | Detail of image showing bone formation on implant surface at 5 weeks on rabbit grafted with OsteoBiol[®] Putty. Staining hematoxyline-eosine. Courtesy of Dr U Nannmark, University of Göteborg, Sweden

Tissue of origin

Heterologous cortico-cancellous bone mix

Tissue collagen

Preserved plus an additional 20% collagen gel (OsteoBiol[®] Gel 0)

Physical form

Pre-hydrated granules and collagen gel of plastic consistency

Composition

80% granulated mix, 20% collagen gel

Granulometry

Up to 300 microns

Re-entry time

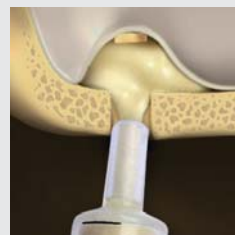
About 4 months

Packaging

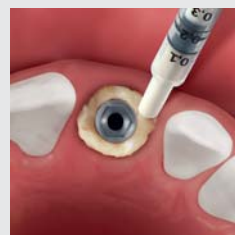
Syringe: 0.5cc, 1.0cc, 3x 0.25cc, 3x 0.5cc



POST-EXTRACTIVE SOCKETS



OSTEOTOME SINUS FLOOR AUGMENTATION



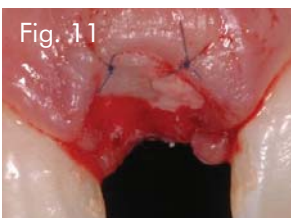
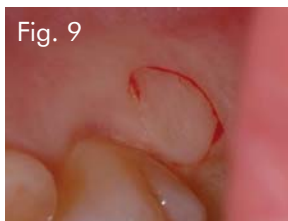
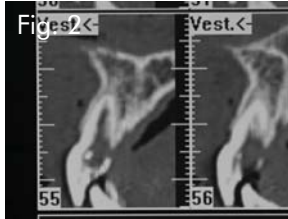
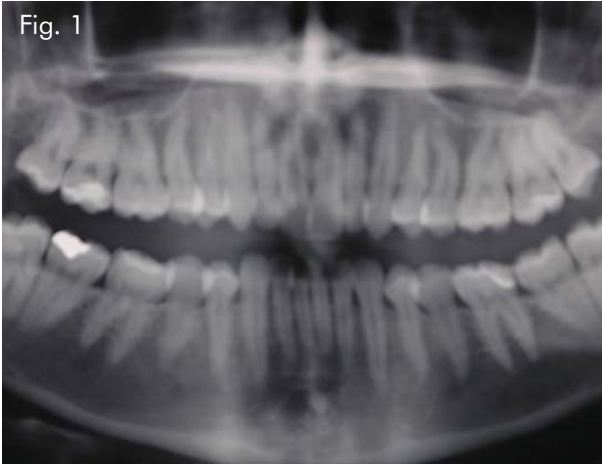
PERI-IMPLANT DEFECTS



RIDGE SPLIT



Excellent clinical performances



CASE REPORT

■ PERI-IMPLANT DEFECT

Treatment of peri-implant defect after post-extractive implant placement

Sex: **Female** | Age: **32**

Fig. 1 Preliminary panoramic view

Fig. 2 Dentascan shows internal root resorption of tooth 1.1

Fig. 3 Buccal view

Fig. 4 Palatal view

Fig. 5 Occlusal view after extraction

Fig. 6 Osteotomy performed

Fig. 7 Implant in place

Fig. 8 Peri-implant gap grafted with OsteoBiol® Putty

Fig. 9 Free gingival graft harvested from the palate

Fig. 10 Occlusal view

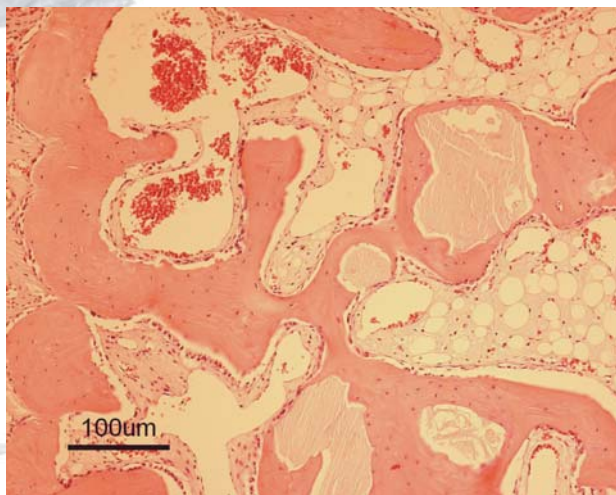
Fig. 11 Buccal view

Fig. 12 Temporary restoration in place

Documentation courtesy of
Dr **Roberto Rossi**
M.Sc.P. in Periodontology
Private practitioner in Genova, Italy
e-mail: drrossi@mac.it

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Part of a biopsy showing newly formed bone after treatment with OsteoBio® Putty. Biopsies were taken 5 weeks after implantation in rabbit maxillae. The smaller granules are totally covered by newly formed bone and seams of osteoblasts are recorded almost at all bone surfaces. Both the marrow spaces and bone are fully nurtured by neovessels. Htx-eosine. Original magnification x20. Courtesy of Dr U Nannmark, Göteborg University.

All literature about OsteoBio® Putty in blue

Putty

ENGINEERED FOR PERI-IMPLANT DEFECTS

Pre-hydrated collagenated heterologous cortico-cancellous bone paste



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 2003/32/EC (notified body CE 0373).

www.osteobiol.com

Tecnoss® Dental

Via Torino, 23
10044 Pianezza (TO) | Italy
Tel +39 011 9682823
Fax +39 011 9787577
info@tecnoss-dental.com

www.osteobiol.com

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