techBiomat
technology in Biomaterials

Technology in Biomaterials, settled in Barcelona since its foundation in 2011, created by professionals with a large experience in biomaterials and other medical fields. Its main activity revolves around production of biomaterials for surgery.

TiB´s goal is to offer a complete line of high-level biomaterials, driven by an absolute commitment to quality products.

TiB manufactures its own Medical Devices and **TiB** is enforcing the strictest security protocols.

- Bone graft 100% natural
- Easy handling
- Rapid bone regeneration
- Excellent osteoconductivity
- High wettability
- Maximum efficacy and safety in bone regeneration

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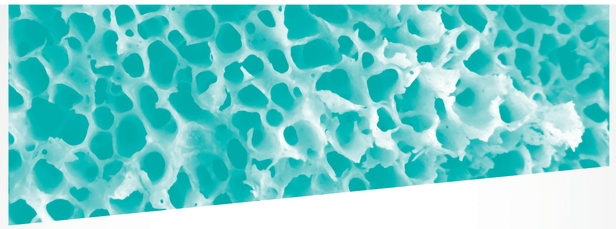
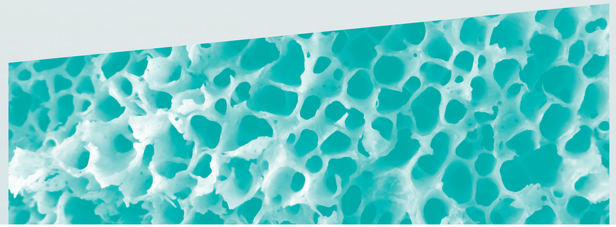
C/ Consell de Cent 111 Ppal 2ª 08015, Barcelona Spain
T. +34 93 419 29 68 / info@technologyinbiomaterials.com

www.technologyinbiomaterials.com



techBiomat bone®

Spongious bovine bone



techBiomat bone® is an inorganic mineral matrix made of cancellous bovine bone.

The manufacturing based on different physical-chemical processes removes all organic components from the femur proximal extremity (femoral bovine head) guaranteeing high safety.

Due to the characteristics of its natural and inorganic structure, **techBiomat bone®** may be compared to human bone. Its interconnected pore structure and special consistency, it promotes bone growth in the implant zone, and undergoes a gradual physiological remodeling process through the osteoclasts and osteoblasts. **techBiomat bone®** is an excellent alternative to autologous bone.

INDICATIONS FOR techBiomat bone®

Alveolar ridges reconstruction and augmentation.

Filling of bone defects after root resection, cystectomy, extraction of retained teeth and root end surgery.

Implantology: bone dehiscence, filling of immediate implants, preparing implant sites, sinus lift procedures.

Periodontology: filling of bone defects complemented by products for guided tissue regeneration (GTR) and guided bone regeneration (GBR).

PRODUCT SPECIFICATIONS

techBiomat bone® Spongious bovine bone is available in granules with a particle size between 0.25-1.68 mm: it is presented in gamma radiation sterile vials of 0.5g, 1.0g and 2.0g.

Ref.	Particle Size	Content
TBBHA01	0.25 - 1.68 mm	0.5 g
TBBHA02	0.25 - 1.68 mm	1 g
TBBHA03	0.25 - 1.68 mm	2 g

USING techBiomat bone®

techBiomat bone® should be used in accordance with the general medical guidelines regarding handing in sterile conditions and pharmacological treatment of patients

- Exposing the defect using a full-thickness flap, depending on the basic surgical procedure, and completely eliminate the granulation tissue.
- Before performing the granule graft on the patient, wet it with physiological saline solution, apyrogenic water or blood from the patient.
- Apply the material to the defect, using sterile surgical instrument.
- Model gently in the site with the spatula.
- Do not apply excessive quantities of material to the defect.
- The flap should cover the implanted material completely during the suturing process.
- As a rule, in cases in which should be covered subperiostically with a collagen membrane.
- Control of bacterial infection and adequate oral hygiene will promote effective periodontal treatment. For this reason, before the surgical procedure it is advisable to implement hygiene regarding care and maintenance of the affected area both before and after surgery.

SAFETY, EFFICACY AND QUALITY / made in Spain

Manufacturing process: techBiomat bone® is entirely made of the femoral head of cattle. The origin of raw material and type tissue used and the manufacturing process of this bovine material meets the safety criteria and requirements. Therefore, the risk of BSE transmission can be considered negligible.

The characteristics of the natural and anorganic structure of **techBiomat bone®** can be compared to that of human bone.

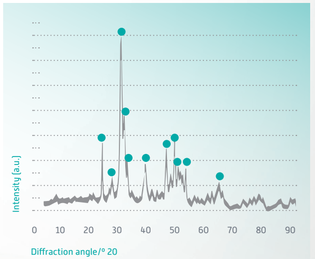
RESULTS FROM CHEMICAL ANALYSIS

The chemical groups in the Fourier Transform Infrared (FT-IR) spectra of **techBiomat bone®** shows the characteristics peaks of hydroxyapatite.

Chemical Analysis Service, Autonomous University of Barcelona, Protocol on the analysis of material, 2022.

RESULTS FROM X-RAY DIFFRACTION

Analysis reveals a typical structure of hydroxyapatite. **techBiomat bone®** shows a high crystallinity



RATIO Ca/P

The ratio Ca/P of **techBiomat bone®** is almost same as that of human bone

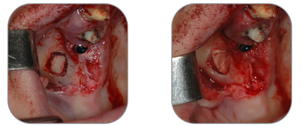
techBiomat bone®	Human bone
1.68- 1.71	1.72

CLINICAL APPLICATION / Clinical cases by Dr. Daniel Ostrowicz

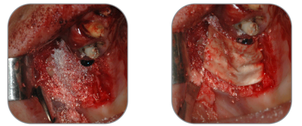
1. Ridge expansion with techBiomat bone®

Flap and separation of hard and soft tissue | Alveolar ridge splitting with a piezo- surgery | Ridge expansion using bone-expanders | Implant placement | **techBiomat bone®** particles sizes 0.25-1.68 mm in place | Placement of collagen membrane | Suture: primary wound closure

2. Sinus lift with techbiomat bone®

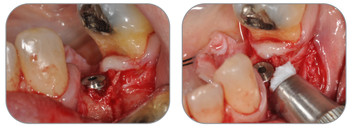


Preparation of lateral sinus window with piezo-surgery. | Sinus window retraction and collagen membrane placement.

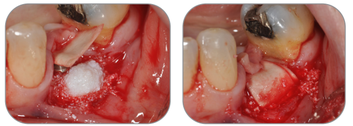


Filling of the sinus cavity with ***techBiomat bone®*** *(particle size 0.25-1.68 mm)* | *Covering of the filling* ***techBiomat bone®*** *with collagen membrane*

3. techBiomat bone® for coverage of dehiscence



Implant placed with dehiscence | Vestibular bone repair with **techBiomat bone®**



Covering of the filling ***techBiomat bone®*** *with collagen membrane* | *Before primary wound closure*

4. Implant placement post-extration. Fill the gap on implant placement with techBiomat bone®

Situation after tooth extraction | Implant placement | Filling around implants with **techBiomat bone®** | Placement of collagen membrane covering the bone filling. | Closure of the site using sutures

To facilitate new bone formation, the implanted material should be in direct contact with bone walls that have good vascularization (in some cases it is advisable to prepare the bone tissue with a drill).

In case of large cavites, combining **techBiomat bone®** with autologous bone may improve the new bone formation.

In areas with an increased bone matrix, no mechanical load should be applied, and implants should not be placed in their final position until 4-6 months after the material has been inserted.

Correct treatment of the periodontal lesion is necessary to guarantee the results (root planning, curettage, etc.) before applying **techBiomat bone®**