osteoplant

the neo-osteogenesis **process**

follows well-established phases

Bioteck bone substitutes optimally support the healing of bone defects because their behaviour is in line with the physiological kinetics of the regeneration.

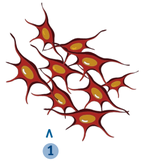
1) Following the graft, a dense network of capillaries buds out from the endogenous bone tissue and invades the grafted volume. Inactive mesenchymal cells exit the capillaries and in response to precise molecular signals, differentiate in active osteoblasts.

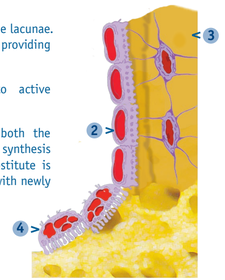
2) Osteoblasts arrange themselves in chains on the edge of the graft and start to deposit osteoid substance that is quickly and gradually mineralized.

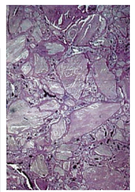
3) Some osteoblasts turn into osteocytes inside the bone lacunae. During these phases the materials acts as a scaffold, providing mechanical support for the vessels and cells.

4) Dormant pre-osteoclastic cells differentiate into active osteoclasts, starting the bone remodelling process.

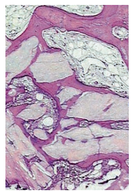
5) Lastly, a physiological balance is reached, in which both the osteoclastic breakdown and the osteoblastic bone synthesis activities carry on together. The Bioteck bone substitute is physiologically remodelled and completely replaced with newly formed bone tissue during this phase.



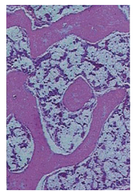




^ **Phase 1**
Formation of endogenous bone with graft incorporation. The lack of reactive fibrous tissue formation is noted.

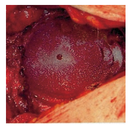


^ **Phase 2**
Osteoclastic remodelling of the graft. Host bone tissue development phase.



^ **Phase 3**
Physiological remodelling process completed. The graft is completely replaced with viable structured and mineralized bone tissue.

^ **1)** mesenchymal stem cells
2) active osteoblasts
3) osteocytes
4) active osteoclasts



Osteoplant Flex acatabular-mat implanted

BIOTECK®
The science of bone tissue

Bioteck S.p.A.
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Bioteck is the leading Italian company in the production of xenografts for neurosurgery, orthopaedic surgery and oro-maxillo-facial surgery. Established in the late 1990s, it has enjoyed non-stop growth thanks to its exclusive 37°C enzymatic deantigenation process, which guarantees the highest safety standards without affecting the biological and biomechanical properties of the treated grafts.

Safety and quality with no compromises

The exclusive production process that takes place in a modern facility with more than 300 m² of clean rooms and the stringent environmental and quality controls, guarantee the absolute safety and quality of grafts.

CE 0373

Bioteck manufactures and distributes in more than 50 countries:

Osteoplant - a complete range of spongy and cortical grafts.
Osteoplant Flex - a line of partially demineralized grafts with soft and flexible features
Osteoplant Activagen & Angiostad - injectable and mouldable bone pastes in syringe, with outstanding osteoconductive and osteoproductive properties.

ISO 9001 ISO 13485

concept: mauro fortani - vi cod. 20130506_BONE_GRAFT_ENG printc abatti.it

BIOTECK®
The science of bone tissue

safetybiocompatibility

osteoconduction

completeremodeling

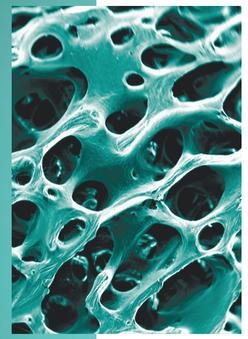
naturalscaffold

osteoplant
osteoplantflex
biocollagen

naturalscaffold

Bioteck

exclusive process of **deantigenation**



Bioteck bone substitutes are made from equine bone tissue using an exclusive chemical-physical process of enzymatic deantigenation. Utilisation of digestive enzymes working at physiological temperature (37°C) allows the antigenic component of the tissue to be removed without affecting the mineral component and bone collagen on which it is deposited. The unaltered mineral fraction is recognised by the osteoclasts as endogenous. The bone substitute consequently undergoes a total remodelling process, to the point of being completely substituted, in physiological time, by endogenous bone. The whole and unaltered collagen component gives the graft (if in the shape of block or wedge) the same load-bearing as natural bone. Furthermore, bone collagen in its native conformation performs all of the functions it is known for (activating growth factors and acting as a substratum for osteoblasts adhesion), thus creating a physiological and biologically favourable environment for bone regeneration.

37°C enzymatic process

beta ray terminal sterilization

unaltered collagen structure

safety and quality

total biocompatibility

complete**remodeling**

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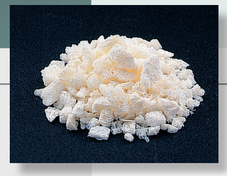
The science of bone tissue



cancellous **bone chips**

OB-01-05	Cancellous Chips	(4 - 6 mm)	5 cc
OB-01-10	Cancellous Chips	(4 - 6 mm)	10 cc
OB-01-20	Cancellous Chips	(4 - 6 mm)	20 cc
OB-01-30	Cancellous Chips	(4 - 6 mm)	30 cc
OB-01-50	Cancellous Chips	(4 - 6 mm)	50 cc
OB-01-90	Cancellous Chips	(4 - 6 mm)	90 cc

cancellous **blocks**

OSP-01	Cancellous Block	20 x 20 x 10	mm
OSP-01A	Cancellous Block	10 x 10 x 10	mm
OSP-01B	Cancellous Block	10 x 10 x 20	mm
OSP-01B2	Cancellous Block	10 x 10 x 20	mm *2 pc*
OSP-02	Cancellous Block	50 x 40 x 5	mm
OSP-02B	Cancellous Block	40 x 30 x 10	mm
OSP-03	Cancellous Block	50 x 40 x 10	mm

bio-gen **putty**

BGP-02	BIO-GEN Putty	2	cc
BGP-05	BIO-GEN Putty	5	cc
BGP-10	BIO-GEN Putty	5	cc *2 pc*

cancellous **dihedron**

OSP-07A	Cancellous Dihedron	50 x 20 x 10	mm

cancellous **wedges**

OSP-05	Cancellous Wedge	40 x 30 x 10	mm
OSP-05B	Cancellous Wedge	40 x 30 x 15	mm
OSP-06	Cancellous Wedge	50 x 40 x 10	mm
OSP-06B	Cancellous Wedge	50 x 40 x 15	mm
OSP-07	Cancellous Wedge	50 x 20 x 20	mm

cancellous **wedges** for Plating Fixation

OSP-075P	Canc. Wedge for Plating Fixation	50 x 40 x 7,5	mm
OSP-010P	Canc. Wedge for Plating Fixation	50 x 40 x 10	mm
OSP-0125P	Canc. Wedge for Plating Fixation	50 x 40 x 12.5	mm

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The science of bone tissue

flex **acetabular-mat**

OSP-070	Flexible Acetabular-Mat	ø 70 x 5-7 mm

flex cancellous **sheets**

OTC-S2	Flexible Cancellous Sheet	40 x 30 x 3 mm
OTC-S3	Flexible Cancellous Sheet	30 x 20 x 3 mm
OTC-S4	Flexible Cancellous Sheet	50 x 25 x 3 mm
OTC-S5	Flexible Cancellous Sheet	50 x 50 x 3 mm

flex cortical **sheets**

OTC-C4	Flexible Cortical Sheet	40 x 40 x 1-2.5 mm
OTC-C6	Flexible Cortical Sheet	50 x 25 x 1-2.5 mm
OTC-C7	Flexible Cortical Sheet	50 x 50 x 1-2.5 mm
OTC-C8	Flexible Cortical Sheet	70 x 70 x 1-2.5 mm
OTC-C9	Flexible Cortical Sheet	40 x 40 x 0.7-1 mm

biocollagen **fleeces**

BCG-255	Biocollagen fleece	25 x 50 x 8 mm
BCG-508	Biocollagen fleece	50 x 80 x 8 mm
BCG-1008	Biocollagen fleece	100 x 80 x 8 mm

biocollagen **membrane**

BCG-07	Collagen Membrane	70 x 50 x 0.2 mm

hemi-**femoral head**

OSP-04	Hemi-Femoral Head	ø 60 mm

cortical **plates**

OSP-08	Cortical Plate	80 x 20 x 6 mm
OSP-09	Cortical Plate	100 x 20 x 6 mm
OSP-10	Cortical Plate	120 x 20 x 6 mm
OSP-22	Cortical Plate	190/200 x 20 x 6 mm