Bioresorbable bone replacement from microporous and macroporous β-tricalcium phosphate.

BetaBASE® MP

BetaBASE MP consists of pure-phase β-TCP and since it is a synthetic material it is widely noncritical for the patient.

BetaBASE MP has an interconnected pore system with micropores and macropores that reproduce the well-known osteoconductive effect very well.

Osteoblasts and blood vessels are able to proliferate rapidly in the open pore system and grow swiftly in the BetaBASE MP. This also enables internal resorption of the materials.

The high overall porosity of BetaBASE MP (> 60 %) means that the body has to break down a far smaller quantity of bone replacement material, based on the volume of the defect. This accelerates the resorption process and also creates new opportunities to fill large bone defects. Clinical studies have demonstrated that the material is completely resorbable after ca. 6 to 24 months.

The polyhedric granular structure of BetaBASE MP makes it safe and easy to apply to the defect, in particular when mixed with the patient's blood.

BetaBASE MP conforms to ASTM F 1088-04, the internationally recognised standard for materials.

INDICATIONS

- Filling of defects following exstirpation of bone cysts
- Filling of extraction defects for the creation of an implant bed
- Filling of defects in the case of corrective osteotomy
- Other multi-layer bone defects of the alveolar processes and the facial skull
- Periodontal defects, also in connection with membranes
- Defects following the extraction of impacted teeth
- Defects following apicoectomy
- Sinus floor elevation
- Filling of gaps between the alveolar cavity and the implant

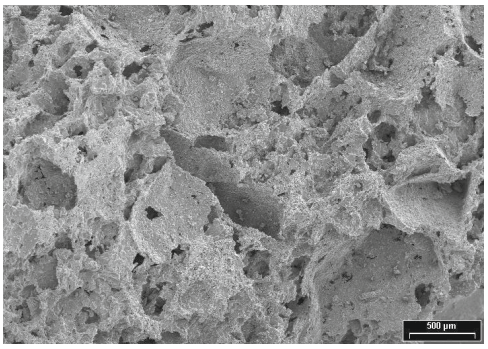

Figure 1: The microporosity is visible in this enlargement.

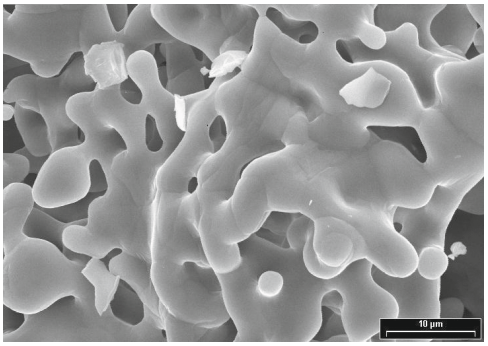

Figure 2: Microporosity in detail, pores up to approx. 5 µm; sinter necks are discernible.

APPLICATION

It is advisable to apply BetaBASE MP in a moist state. The patient's own blood or blood plasma should be used. If neither option is available in sufficient quantities, a sterile isotonic saline solution may be used.

Where defects are larger than approx. 2 cm^3 it is advisable to mix BetaBASE MP with spongiosa.

BENEFITS

Interconnected porosity
As a result of the open, consistent struc tures of the granulate, the bone obtains the possibility of ingrowth via complete osteone structures. Moreover, the granulate has very satisfaying tamponing properties due to its capillaries.

Osteoconductivity
BetaBASE MP stimulates the direct ingrowth of the bone into its through-pores before the resorption procedure begins. Hence BetaBASE MP acts as a guide rail for the formation of new bone.

Complete resorption
The resorption rate of BetaBASE MP is adapted to the formation of new bone. Simultaneously to the degradation of the β-TCP the formation of the natural bone in the augmentation area is variable, depending on the regeneration dynamics.

Biocompatible
The high biocompatibility of β-tricalcium phosphate (TCP) has been extensive established in numerous clincal trials. Neither unfavourable tissue reactions nor immunological defensive reactions could be established. BetaBASE MP exhibits very good integration into the natural bone without connective tissue encapsulation or pa thological tissue changes. No osteoclast activity has been demonstrated.

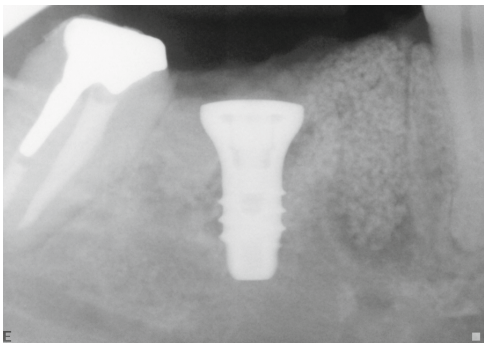

Figure 3: X-rays of a patient with BetaBASE MP in a socket.

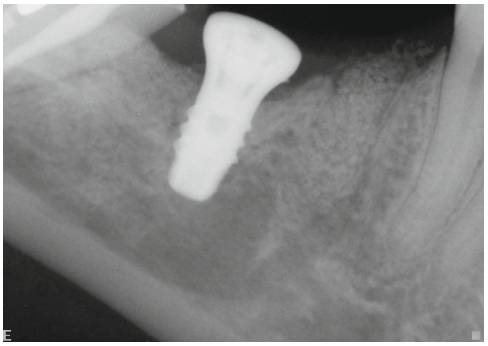

Figure 4: 6 Months after surgery.

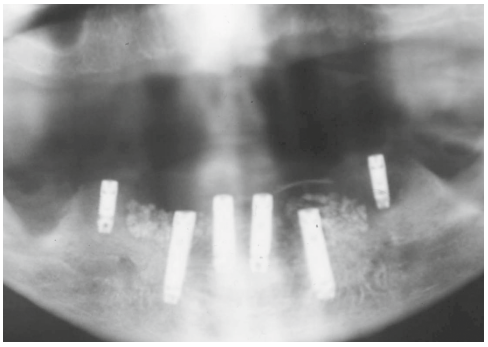

Figure 5: A defect in the lower jaw – filled in with BetaBASE MP and 6 placed implants.

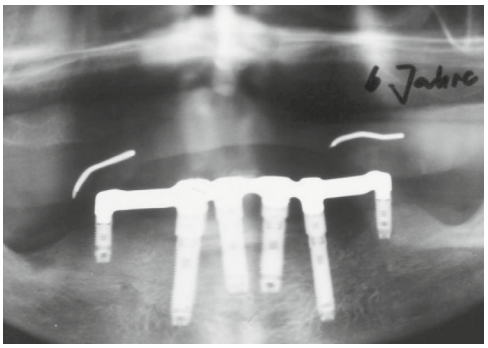

Figure 6: New X-ray image after 6 years – BetaBASE MP can no longer be seen.

DECOMPOSITION BEHAVIOUR

The decomposition of BetaBASE MP leads exclusively to products which are constituents of the tissue fluid (calcium ions, phosphate ions) and their physiological variance is not exceeded in the course of the bioresorption. New bone formation and resorption of the granulate run parallel pro portional, i. e., while new bone forms in the defect, the bone substitute material is simultaneously degraded. According to the size of the granulate, the resorption process is normally completed after approximately 6 to 24 months, depending on the regeneration dynamics of the patient. The complete resorption is checked radiographically for the purpose of implantation.

DURABILITY

BetaBASE MP is available in 0.5 ml and 1 ml vials. BetaBASE MP is sterile and free of pyrogens and, as long as the packaging remains intact, has a shelf life of 5 years at room temperature.

Information for ordering:

BetaBASE MP	1 x 0,5 ml	0.2 – 0.5 mm	BMP 19002105
BetaBASE MP	5 x 0,5 ml	0.2 – 0.5 mm	BMP 19002505
BetaBASE MP	1 x 0,5 ml	0.5 – 1.0 mm	BMP 19005105
BetaBASE MP	5 x 0,5 ml	0.5 – 1.0 mm	BMP 19005505
BetaBASE MP	1 x 1,0 ml	0.5 – 1.0 mm	BMP 19005110
BetaBASE MP	5 x 1,0 ml	0.5 – 1.0 mm	BMP 19005510
BetaBASE MP	1 x 0,5 ml	1.0 – 2.0 mm	BMP 19010105
BetaBASE MP	5 x 0,5 ml	1.0 – 2.0 mm	BMP 19010505
BetaBASE MP	1 x 1,0 ml	1.0 – 2.0 mm	BMP 19010110
BetaBASE MP	5 x 1,0 ml	1.0 – 2.0 mm	BMP 19010510

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Ordering: www.biovision.de/en/order

BIOVISION specialises in the development and manufacturing of biomaterials. In particular in the processing of resorbable polymer products by means of injection moulding and the production of resorbable ceramic products. These technologies are used inter alia in our products for dental surgery/implantology and for orthopedics. The following products are also included in our portfolio:

Orthopedics:

BetaBASE bioresorbable bone replacement

BioBASE bioresorbable bone replacement

PolyPIN bioresorbable bone pin

Wound Care:

EpiGARD synthetic skin replacement

Dental Surgery:

BetaBASE MP bioresorbable bone replacement

BioBASE AP bioresorbable bone replacement

LeadFIX bioresorbable membrane pin

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