

Synthe-Bone

REABSORBABLE
BONE REGENERATOR

CORTEX
dental implants

What is Synthe-Bone?

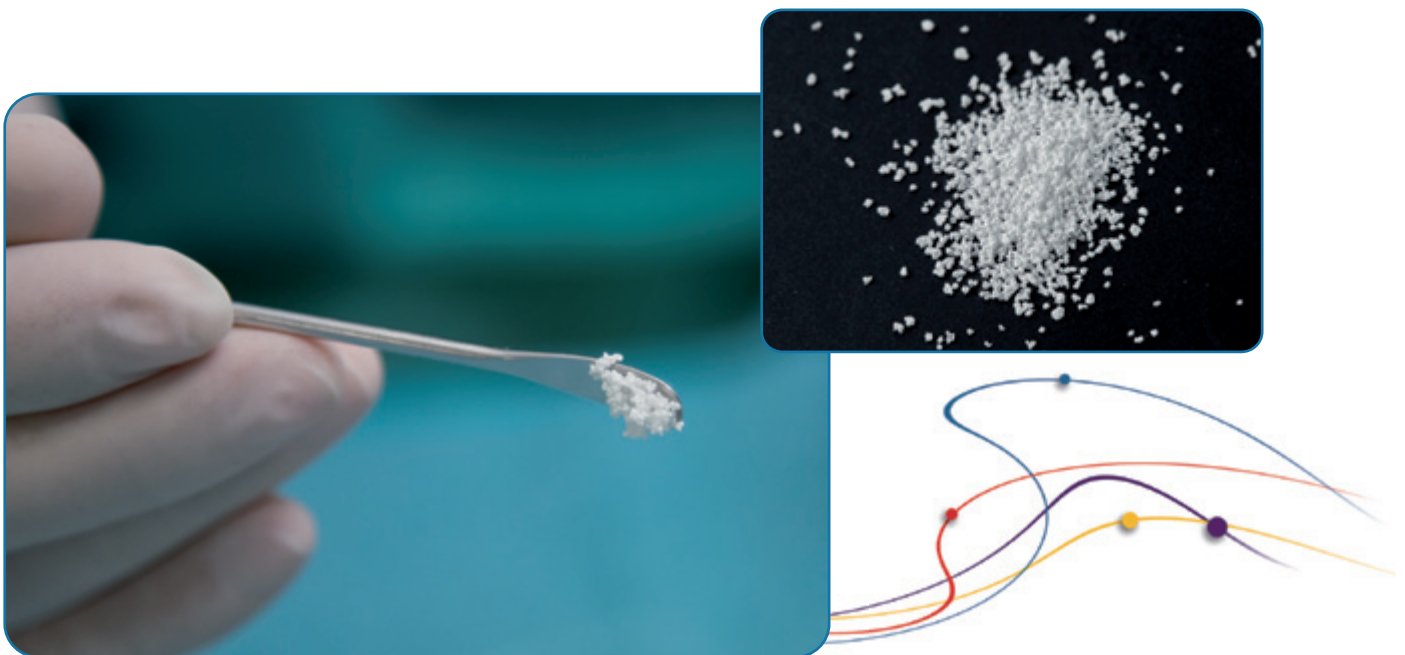
Synthe-Bone is a range of bone replacement products made of Tricalcium β -Phosphate in compliance with international standard ASTM F1088-04.

The Synthe-Bone's product range complies with the maximum requirements of any biomaterial for odontological use.

Synthe-Bone's structure is similar to that of spongy bone trabecules in its interconnected porosity, which allows it to work as osteoconductor support where blood capillaries and osteogenic cells adhere to form bone.

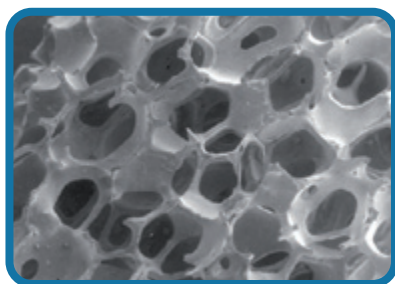
Its bioactivity and composition allows them to intervene in the bone remodeling process with full osteointegration and bioreabsorption in so that it is replaced by the patient's own bone.

Due to its characteristics, properties and composition, Synthe-Bone is an ideal biomaterial for bone regeneration processes.

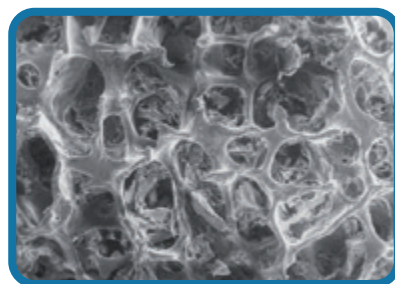


Effective bone regeneration

The technology we apply in our manufacturing process allows us to develop three-dimensional structures in our products that are similar to those in the human bone.



Synthe-Bone SEM
Micrography



Human Cortical Bone
SEM Micrography

Characteristics and benefits

Biofunctionality.

Osteoconduction.

It delivers excellent mechanic stability, **avoiding micro-movement**.

It preserves the shape and **volume** of the defect to avoid bone reabsorption.

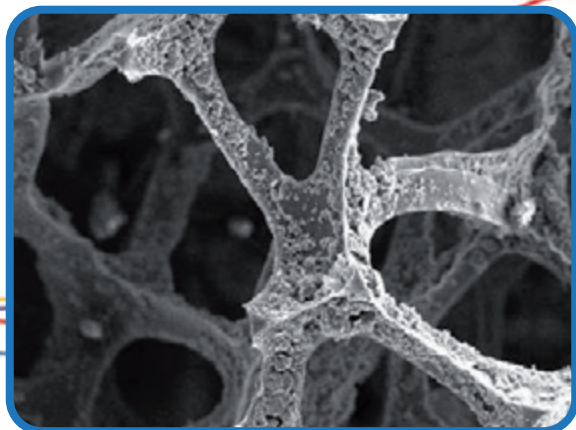
It favours **rapid colonisation** of proteins and cells.

It acts as the ideal support, as it is recognised by the body and blood capillaries and cells adhere to it to form the bone.

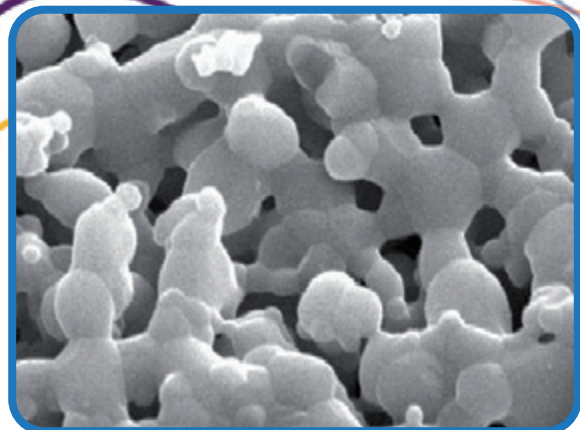
Excellent macroporosity and high microporosity

Bioactivity

Osteointegration



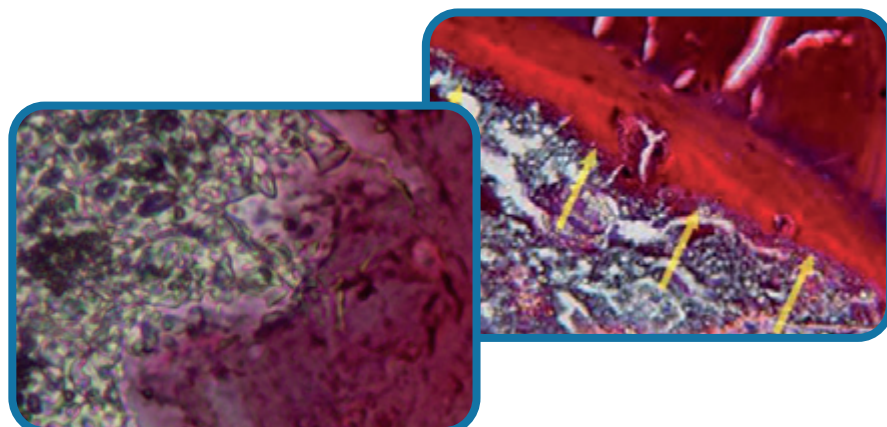
Its excellent microporosity allows for **permeability** of the cells towards the inside of the Synthe-Bone particles



Its microporosity favours **cell adhesion** and adhesion of the growth factors that we may add, thus favouring the biological process of bone regeneration

Beta-Tricalcium Phosphate Purity > 99%

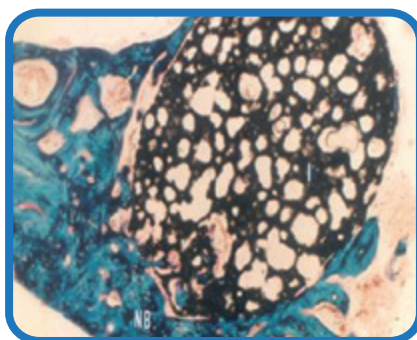
Bioabsorption
Bioremodelling



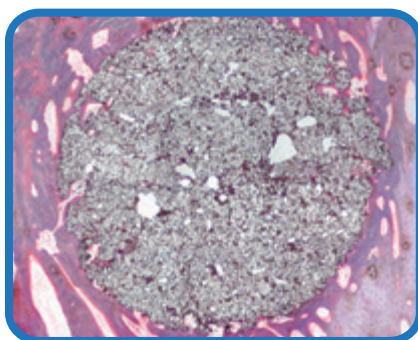
- Synthe-Bone superficially reacts with its physiological medium, dissolving and precipitating hydroxyapatite on the surface.
- This precipitation leads to the appearance of osteoblasts and collagen fibre that will form immature bone.
- Immature bone becomes structured and mature, continuing with the absorption of Synthe-Bone until it is totally replaced by the newly formed bone.

Predictable and stable regenerative results

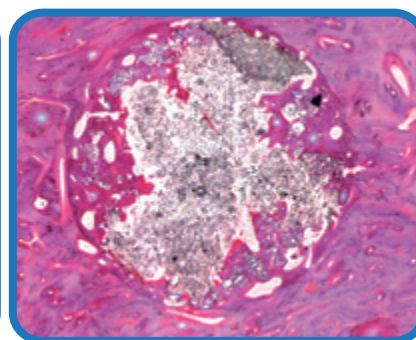
“Effective bone regeneration”



3 weeks(a)



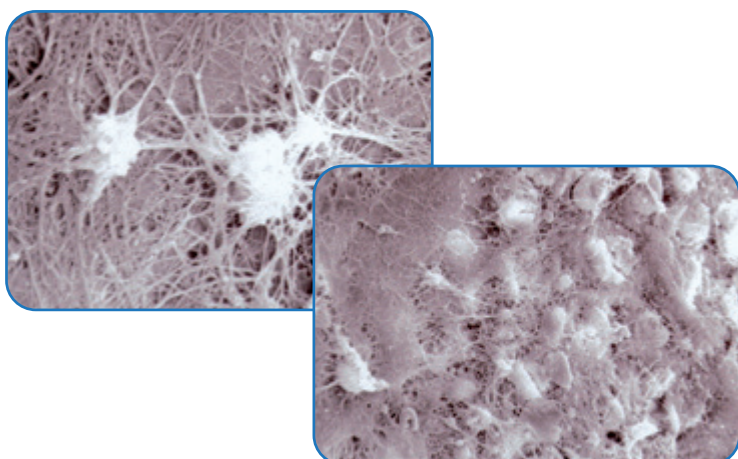
2 months(b)



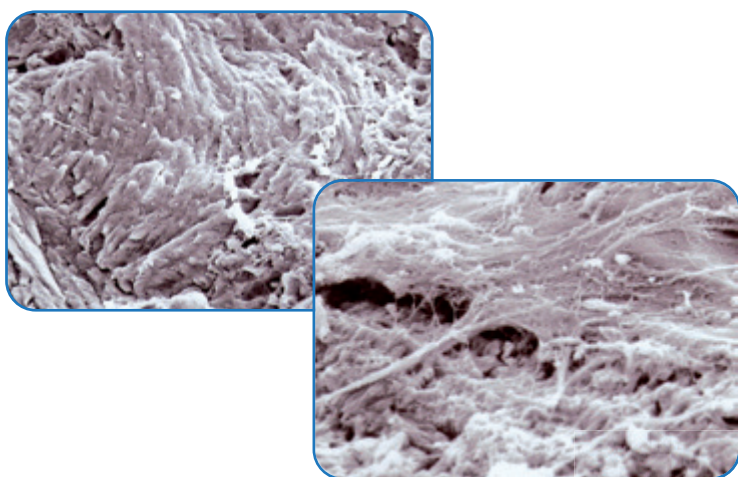
14 months(c)

(a) Goldner staining
(b)(c) Wheatley staining

Synthe-Bone interactions and bioactivity



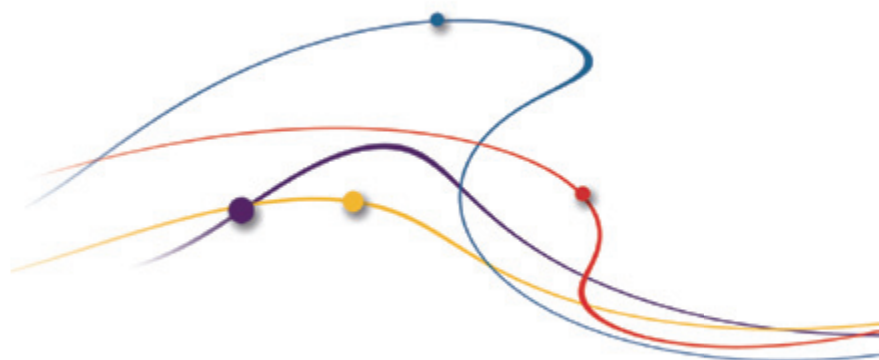
Micrographs taken at 45 days after implant of Tricalcium Beta-Phosphate with electron microscopy. Initial colonization can be observed with cell nodes (1) that migrate through the implant leading to the formation of fibrin (non mineralized osteoid tissue) (2).



There are also some areas where osteoid tissue is mineralized to a larger extent (3) and areas where there is already newly formed bone (4). Micrograph A shows areas of coexistence between non mineralized reabsorbed material (fibrin) and structured material (newly formed bone), which implies the directional implant absorption.

Indications

- Filling of post-extraction bone cavities
- Crest reconstruction
- Covering of fenestrations
- Intrabone defects in periodontics
- Expanding bone regeneration
- Furcal lesions
- Radicular exposures



FAQ

Can Synthe-Bone be used with antibiotics?

The use of antibiotics is usually unnecessary in the case of Synthe-Bone. We cannot recommend missing it with any antibiotic as we cannot make studies that analyse the combined used of these compounds.

Can Synthe-Bone be mixed with autologous bone?

Synthe-Bone has been designed to be used without having to mix it with the bone of the patient. There is no problem whatsoever if the user wants to mix it with autologous bone in order to increase the volume of the implant material for the defect.

Can we re-sterilise Synthe-Bone?

No. Synthe-Bone does not have the authorization to be re-sterilised in dental practice. KERAMAT, the manufacturer of Synthe-Bone products cannot be claimed responsible for the product in such circumstances.

Catalogue Number	Package
CBM-SB05	0.5 gr
CBM-SB10	1.0 gr
CBM-SB20	2.0 gr

CORTEX
dental implants

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