

Innovative Biosolutions for Bone Reconstruction



*SCAFFOLD
IDEAL BIOMIMETIC*

- State-of-the-art nanostructured morphology
- Fully synthetic
- No unwanted reactions
- No immunological risk

35 YEARS AHEAD

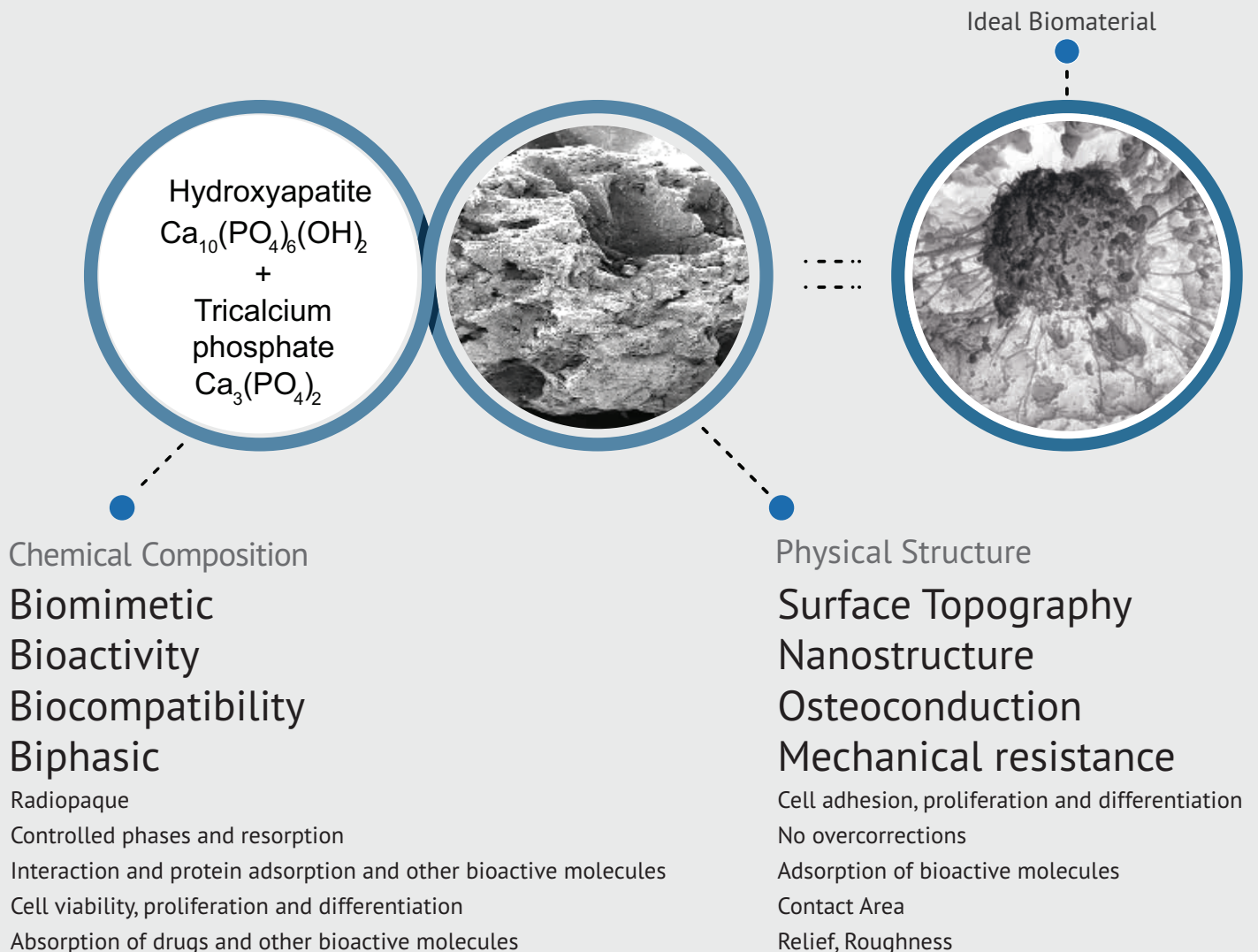
THE PRODUCT



OSTEOSYNT® family of products are biomaterials made as the ultimate generation of biphasic bioceramics with calcium phosphates containing hydroxyapatite and β -phosphate tricalcium being highly biocompatible, nanostructured, biomimetic, bioactive, osteoconductive and intrinsic osteoinductive with micro, meso and macro intercommunicating pores, available in a diverse range of presentation. For having a composition very similar to the bone matrix, Osteosynt acts as a favorable scaffold for the formation of a new bone tissue and is gradually replaced according to the metabolic activity of each individual with greater efficiency due to its chemical and unique physical characteristics in addition to the versatility of its different designs and formats.

OSTEOSYNT CHARACTERISTICS

The physical-chemical conditions of Osteosynt obtained from a sintering process guarantee some characteristics that make it especially unique and with superior results in the bone reconstruction. All these concepts are based on the principles of the organism and were thought in its development process so that it can interact naturally with substances and structures of the body in the most similar way possible to the functioning of bone tissue, avoiding rejections and without organic residues preventing, minimizing and eliminating risks.



MAIN DIFFERENTIALS

BIOMIMETIC

Osteosynt resembles human bone tissue, allows the circulation of fluids and concentration of patients' bioactive molecules, which favor cell differentiation and new bone formation.

BIOACTIVE

Osteosynt allows the formation of chemical bonds with ions present in patient's body fluids, forming an apatite layer that guarantees continuity between it and the newly formed bone. This property, known as bioactivity, allows the new bone to be directly in contact with Osteosynt, establishing an interface capable of supporting functional loads.

BIOCOMPATIBLE

Biocompatible materials do not induce exacerbated inflammatory responses or release any element or factor that causes it.

RADIOPAQUE

Interaction and adsorption of proteins and other bioactive molecules Cell viability, proliferation and differentiation
Adsorption of drugs and other bioactive molecules

ALLOWS VASCULARIZATION

The different sizes, conformations and interconnections of the Osteosynt pores allow ample vascularization of the reconstructed area, as well as of its interior. These features also make Osteosynt an excellent carrier of drugs and bioactive molecules, in addition to those coming from the patients themselves, which favor the formation of new blood vessels.

IDEAL SCAFFOLD

OSTEOSYNT® creates an ideal scaffold, providing a desirable matrix that favors bone formation and that presents adequate mechanical resistance. Osteosynt allows new bone formation, which strongly adheres to its surface through a chemical process, due to its composition and physical features. The newly formed bone penetrates its porous structure and fully incorporates it.

OSTEOGENESIS

Osteosynt's interconnected pore structure allows the migration of cells, the formation of blood vessels and the continuation of the osteogenic process and bone turnover. The product's nanostructure enables the circulation of biological fluid throughout the material. This property promotes, among other advantages, the deposition of patients' own organic compounds around and between the pores of the material, creating the conditions for the organism itself to form bone tissue. Osteosynt meets all the needs to create a local condition as close to the ideal as possible, allowing and stimulating the growth of the bone tissue.

OSTEOCONDUCTOR

Osteosynt is osteoconductive as it provides an interconnected structure that promotes the migration of cells, that lead to the formation of new blood vessels and the continuity of the osteogenic process.

INTRINSIC OSTEOINDUCTOR

The intrinsic osteoinduction property of Eincobio biosolutions is consolidated day by day by high-level studies and long-term clinical results. They prove that our biomaterials, due to their own characteristics of chemical composition and micro and nanometric physical structures, are capable of inducing the differentiation of mesenchymal stem cells towards cells committed with the osteogenic lineage.

OSSEOINTEGRATION

Gradual replacement by newly formed bone tissue. The design of the material was based on the principle that osteogenesis is an exclusively biological function, that is, only the organism is capable of forming bone. Thus, OSTEOSYNT creates the conditions that allow and favor, with proven effectiveness, bone neoformation.

CONDUCTOR

Absorption, conduction, deposition and release of drugs, substances and cells, and adsorption capacity of the individual's own proteins. Interaction and adsorption of protein and other bioactive molecules.

MECHANICAL RESISTANCE

Its mechanical resistance is due to its chemical composition (HA + β -TCP, along with other minerals, in lower concentrations), associated with adequate measures and proportions of pores (nano-, micro-, meso- and macropores), in addition to the manufacturing process (conditions such as temperature and pressure).



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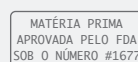
BIBLIOGRAPHY

1. Oromar Moreira Filho, et al. Restoring Facial Contour and Harmony Using Biphasic Calcium Phosphate Bioceramics. *Plast Reconstr Surg.* 2021 Apr 8;9(4):e3516
2. Boulter JM, et al. Biphasic calcium phosphate ceramics for bone reconstruction: A review of biological response. *Acta Biomaterialia.* 2017, 53: 1-12.
3. Trajano VCC at al. Osteogenic activity of cyclodextrin-encapsulated doxycycline in a calcium phosphate PCL and PLGA composite. *Mater Sci Eng C Mater Biol Appl* 2016 Jul 1;64:370-375
4. Lobo SE, et al. Response of stem cells from different origins to biphasic calcium phosphate bioceramics. *Cell Tissue Res.* 2015, 361 (2): 477-95
5. Garrido CA, et al. Biphasic Calcium Phosphate Bioceramics for Orthopaedic Reconstructions: Clinical Outcomes. *International Journal of Biomaterials Volume 2011, Article ID 129727, 9 pages*
6. Gala-Garcia A et al. Bioceramic/Poly (glycolic)-poly (lactic acid) composite induces mineralized barrier after direct capping of rat tooth pulp tissue. *Braz Oral Res.* 2010 Jan-Mar;24(1):8-14
7. Lobo SE, et al. Quantification of bone mass gain in response to the application of biphasic bioceramics and platelet concentrate in critical-size bone defects. *J Mater Sci: Mater Med* (2009) 20:1137–1147
8. Pataro AL, et al. Polymer: bioceramic composites optimization by tetracycline addition. *Int J Pharm.* 2007 May 4;336(1):75-81
9. LeGeros RZ, et al. Biphasic calcium phosphate bioceramics: preparation, properties and applications. *Journal of Materials Science: Materials in Medicine.* 2003, 14: 201-9.

The complete list of scientific articles about Eincobio products can be found on the website www.eincobio.com.br

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