

# Biomatlante Bone Graft Line



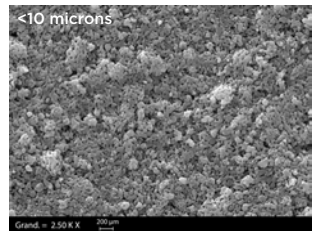
## KEY FEATURES

## KEY BENEFITS

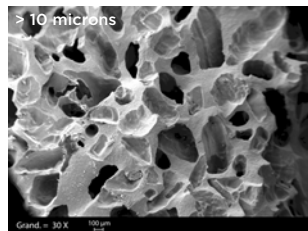
Osteoconductive	Provides a matrix for new bone growth
Molecular mixture of HA and TCP	HA alone resorbs too slowly while TCP resorbs too fast. Bi-phasic HA and TCP allow for a resorption rate similar to that of human bone
70% porosity, interconnected network of macropores and micropores	Porosity similar to cancellous bone enables the colonization of bone cells and biological fluid uniformly within the matrix
Bioactive	For ionic exchange: TCP dissolution and bony crystal precipitation. Newly bioactive interface with bone cells
Macroporosity (>10 microns)	Allows deep invasion of bone cells inside the matrix
+30 years of clinical experience	Host bone formation is systematically demonstrated
Safe	100% synthetic - 5 years shelf life

1. Ransford A.O. and al, "Synthetic porous ceramic compared with autograft in scoliosis surgery. A prospective, randomized study of 341 patients." J Bone Joint Surg Br, 80(1): 13-8. (1998)
2. Gouin F., Delecrin J., Passuti N., Touchais S., Poirier P., Bainvel J., "Biphasic macroporous calcium phosphate ceramic bone substitute for filling bone defects: A report of 23 cases." Revue de Chirurgie Orthopedique: 81; 59-65 (1995)
3. Daculsi G., Corlieu P., Bagot D'Arc M., Gersdorff M., "Macroporous biphasic calcium phosphate efficiency in mastoid cavity obliteration: experimental and clinical findings." Annals of Otolaryngology & Laryngology: 101 (8); 669-674 (1992).
4. Daculsi G., Passuti N., Martin S., Deudon C., Legeros R., Raher S., "Macroporous calcium phosphate ceramic for long bone surgery in humans and dogs. Clinical and histological study." Journal of Biomedical Materials Research: 24; 379-396 (1990).
5. Daculsi G., Jegoux F. and Layrolle P. «The micro macroporous biphasic calcium phosphate concept for bone reconstruction and tissue engineering», Advanced Biomaterials: Fundamentals, Processing, and Application, B. Basu. et al., J. Wiley and sons Inc., pp101-141 (2009)
6. Daculsi G. and al, Current State-of-the-Art of Biphasic Calcium Phosphate Bioceramics, Journal of Materials Science, Vol 14, No 3, pp195-200. (2003)

## Macropores and Micropores\*



Micropores are the intercrystalline spaces where dissolution and recrystallisation occurs



Macropores are a network of interconnected spaces that promote the biological infiltration and cellular colonization by osteoblasts and osteoclasts

MBCP™ Technology is a 100% synthetic, cost-effective bone graft matrix used as an alternative to biologic osteoinductive products (autograft, allograft).

MBCP™ Technology is a 3D interconnected matrix that mimics the trabecular architecture and the thin crystalline structure of natural bone.

### Bioactive matrix for bone healing:

- Promotes bone healing with gradual resorption and replacement by natural bone
- Stimulates the osteoblastic response: proliferation and differentiation

### MBCP™ technology, synthetic worldwide reference

- +30 years of clinical experience
- Concept surgically approved in orthopaedic, spine and maxillofacial surgeries
- The matrix of choice for bone tissue engineering in complex bone reconstruction

## High specific surface area (SSA) for maximum permeability

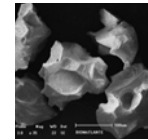
<2mn 100% Permeability



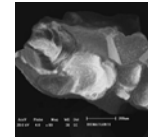
Biomatlante's unique know-how in sintering processes creates highly absorbable microporous biphasic ceramics: MBCP™ exhibit high osteogenic properties for filling large bone defects, when compared to dense materials or autologous bone.



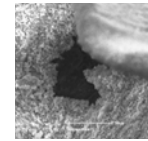
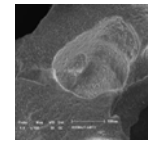
ISO 13485  
Medical Device Class: III  
Read the instructions for use



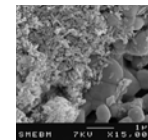
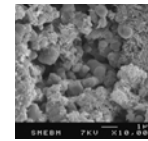
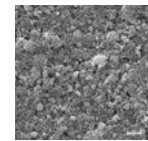
SIGNAL



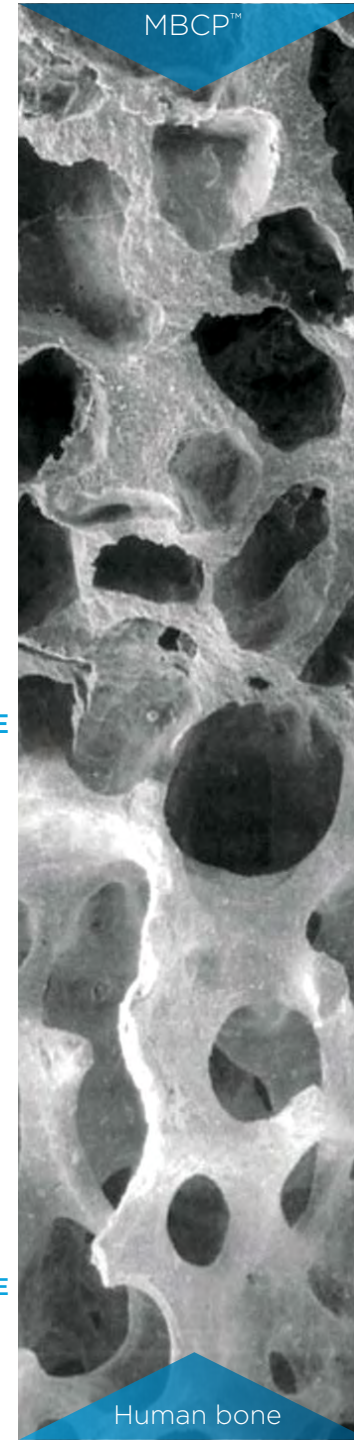
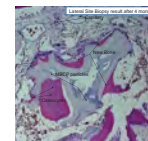
RECRUIT



PROLIFERATE



DIFFERENTIATE



Human bone

## Reconstruction - Traumatology

### MBCP™ Granules

- Over 650 publications demonstrate:
- Excellent safety and efficacy profiles
  - Low morbidity
  - Price sensitive

Size  
1-2mm &  
2-3mm  
  
Vials  
2cc to 30cc



### MBCP™ Wedges

- Supplied by leading world manufacturers  
Easy to use and safe  
Excellent long-term outcomes

Shapes  
Base and  
rounded



### In'Oss™ - MBCP™ Putty\*

- Ready to use  
Moldable  
Volume Stability

Syringe  
6 mL  
14mL



MBCP™ Granules 1-2mm	MBCP™ Granules 2-3mm	MBCP™ Wedges	In'Oss™ MBCP™ Putty
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### RECONSTRUCTION

High Tibial Osteotomy				
Hip Revision				

### TRAUMATOLOGY

Fractures				
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### OTHERS

Autograft Extender				
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\*Data on files, Biomatlante

\*Not for sale in the USA

## Spine Surgery

### MBCP™ Solid Cage Inserts\*

Custom shapes  
Proven fusion vs autograft<sup>1,2</sup>  
Radio opaque

Cervical  
Lumbar  
  
Sterile  
Non Sterile



### MBCP™ Granules

Over 650 publications demonstrate:  
• Excellent safety and efficacy profiles  
• Low morbidity  
Price sensitive

Size  
1-2mm &  
2-3mm  
  
Vials  
2cc to 30cc



### MBCP™ Sticks

Supplied by leading world manufacturers  
Easy to use and safe  
Excellent long-term outcomes

Sticks  
5x5x10  
5x5x20



### MBCP™ Syringe

Ready to mix with biological fluids  
and other active agents:  
• Blood  
• Bone marrow

Syringe  
5cc  
10cc



### In'Oss™ - MBCP™ Putty\*

Ready to use  
Moldable  
Volume stability

Syringe  
0.5mL  
1mL  
3mL  
6 mL  
14mL



1. Der-Yang C., Wuen-Yen L., Pon-Chun S., Chung-Chung C. Cervical Cage containing a biphasic calcium phosphate ceramic (*Trosite*™) for the treatment of cervical spondylosis 50 patients with autograft clinical study. (2005) *Surgical Neurology* 63- 497- 504.  
2. Pascal-Mousselard H., Catonné Y., Robert R., Daculsi G. Anterior cervical fusion with PEEK cages, 58 Patient clinical study, *MBCP™ insert* : clinical results of a prospective, comparative multicenter and randomized study comparing iliac graft and a Macroporous Biphasic Calcium Phosphate. - 20TH European Conference on Biomaterials, September 27th - October 1st, 2006, Nantes - France

	MBCP™ Solid Cage Inserts	MBCP™ Granules 2-3mm	MBCP™ Sticks	MBCP™ Syringe	In'Oss™ MBCP™ Putty
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#### INTERVERTEBRAL FUSION

	MBCP™ Solid Cage Inserts	MBCP™ Granules 2-3mm	MBCP™ Sticks	MBCP™ Syringe	In'Oss™ MBCP™ Putty
Cervical	•				•
Lumbar	•				•

#### POSTEROLATERAL FUSION

	MBCP™ Solid Cage Inserts	MBCP™ Granules 2-3mm	MBCP™ Sticks	MBCP™ Syringe	In'Oss™ MBCP™ Putty
Posterolateral Fusion		•	•	•	

\*Not for sale in the USA

## Sports Surgery

### Osteotwin™ Design

- Graduated tapered design to optimize torque
- Differing threads and heads depending on screw length
- Non aggressive thread (to protect the ligament)
- Screw tip tailored to assist insertion into the bone tunnel
- Atraumatic thread for optimal contact

CE 0499

### Osteotwin™ Composite\*

- Regulated resorption and osteointegration to form architectural bone
- Proven osteoconductive material
- Ceramic buffer effect  $\beta$ -TCP<sup>1</sup>, HA<sup>2</sup>



### Osteotwin™ Polylactic\*

- Proven polymer to best manage degradation and mechanical strength retention
- Greater mechanical resistance
- Crystallinity removed to increase resorption

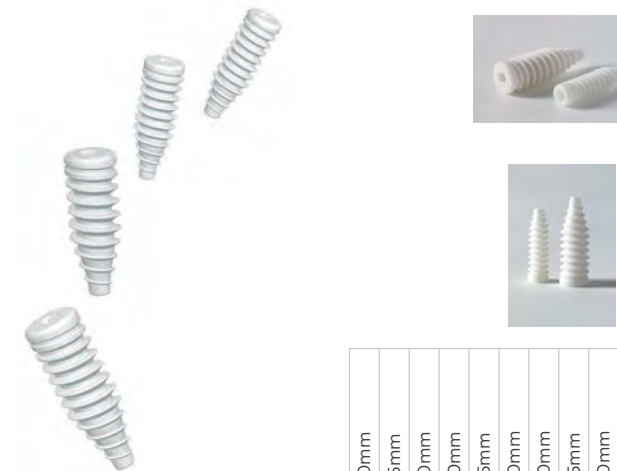


### Osteotwin™ - Instruments

- Torx screwdriver
- Nitinol guide wires
- Tunnel dilators 07/08 & 09/10
- Starter taps



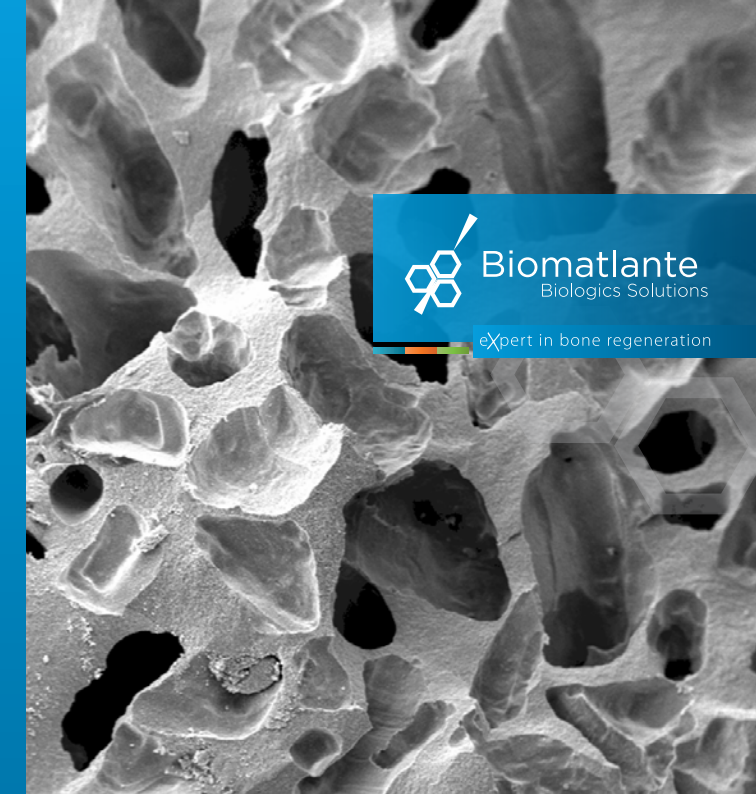
1. Suchenski, Maureen and al. Material Properties and Composition of Soft Tissue Fixation, *Arthroscopy: The Journal of Arthroscopic and Related Surgery*, Vol. 26, No. 6 (June), 2010; pp 821-831  
2. Hunt, JA, Callaghan JT, «Polymer-hydroxyapatite composite versus polymer interference screws in anterior cruciate ligament reconstruction in a large animal model», *Knee Surg Sports Traumatol Arthrosc.* 2008 Jul;16(7):655-60. doi: 10.1007/s00167-008-0528-8 (2008)



	7x20mm	7x25mm	7x30mm	8x20mm	8x25mm	8x30mm	9x20mm	9x25mm	9x30mm	10x25mm	10x30mm
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#### OSTEOTWIN™ - INTERFERENCE SCREW

	7x20mm	7x25mm	7x30mm	8x20mm	8x25mm	8x30mm	9x20mm	9x25mm	9x30mm	10x25mm	10x30mm
Composite	•	•	•	•	•	•	•	•	•	•	•
Polylactic	•	•	•	•	•	•	•	•	•	•	•



**Biomatlante**  
Biologics Solutions  
eXpert in bone regeneration

**MBCP™**  
Technology

Micro Macroporous  
Synthetic Bone Graft

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