



Biomatlante
Biologics Solutions

eXperts in bone regeneration

In'OssTM

MBCPTM Technology

Moldable Synthetic Bone Graft

Microporous Resorbable

Biphasic Calcium Phosphate



Moldable Synthetic Bone Graft

Microporous Resorbable Biphasic Calcium Phosphate

Building on Biomatlante's core MBCP™ Technology, In'Oss™ is an innovative and moldable bone graft, composed of Hydroxyapatite (HA), Beta Tricalcium Phosphate (β -TCP) and a hydrogel.

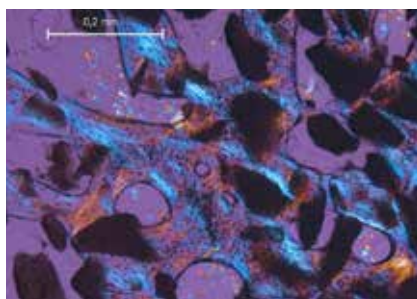
Developed to facilitate handling during bone grafting procedures, In'Oss™ can fit into different grafting sites.

In'Oss™, is the optimal balance between MBCP™ micro granules and an absorbable hydrogel, acting as a carrier for rapid vascularization and mineralization.

In'Oss™ keeps the original graft shape and bone volume. It is gradually absorbed to be replaced by vital architected bone.



- ✓ Resorbable
- ✓ Maintain volume stability
- ✓ No wash-out
- ✓ Superior handling characteristics



4 months bone remodelling with haversian system — Goat model

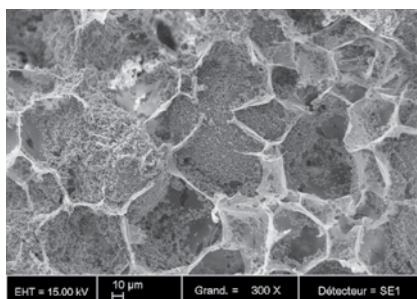
Unique Concept for Bone Augmentation

In'Oss™ has an interconnected microporous structure.

The Hydrogel creates extra spaces for cells and fluid diffusion between MBCP™ microporous particles.

In'Oss™ chemistry encourages the rapid formation of natural bone and the growth of capillary blood vessels throughout the matrix.

These materials have been shown to be perfectly biocompatible and absorbable.



Interconnected structure between the microporous granules and hydrogel

Ready to use

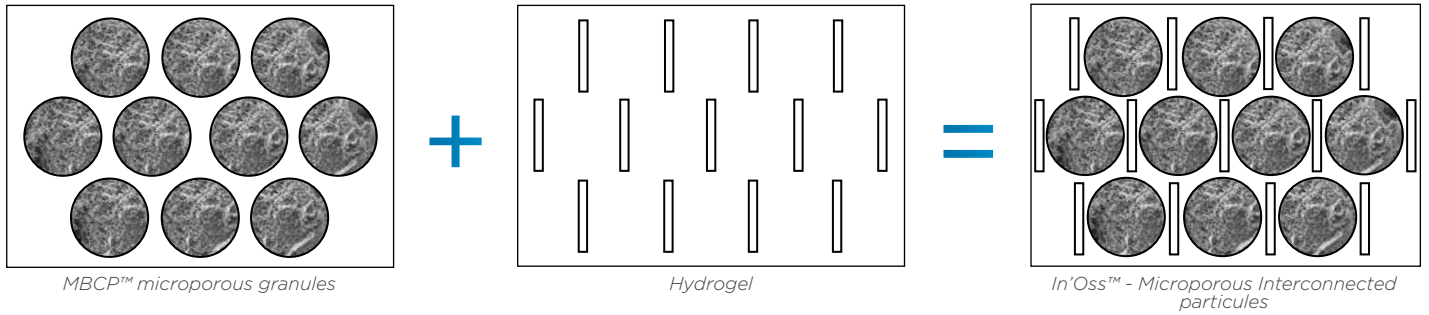
In'Oss™ is supplied in a sterile syringe. In'Oss™ plasticity molds into the graft site.

Safe

In'Oss™ is a safe, completely synthetic product with excellent proven biocompatibility. In'Oss™ uses the core MBCP™ Technology to promote and regenerate high quality bone. This technology has been at the center of extensive clinical studies over the last 30 years (more than 650 published studies) with results comparable to autologous bone.



In'Oss™ Concept



Easy & Fast



In'Oss™ placement



Bony crystals precipitation



Cells spreading



Architected bone growth at the expense of the bone graft

MBCP™ Technology

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 promotes the colonization of bone cells and biological fluid uniformly within the matrix
Microporosity (< 10 microns)	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

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., Passuti N., Martin S., Deudon C., Legeros R., Rahe 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).
4. 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)
5. 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)

References

0.5 mL	1 syringe	1004PU500R
1 mL	1 syringe	1405PU010R



Consult instructions for use



Class III Medical Device
According to EU Directive EEC/93/42



Certain products may not be approved
for sale in all countries



Supplied sterile



ISO 13485

In'Oss™,
Injectable & Moldable.



Resorbable



Maintain volume stability



No wash-out



Superior handling characteristics

1. Fabre, T., Chauveaux, D., Moinard, M., Mais, C., Durand, M., Pollart, C., Daculsi, G. (2008) Pilot Study of Safety and Performance of a Mixture of Calcium Phosphate Granules Combined with Cellulosic-derived Gel after Tunnel Filling Created during Surgical Treatment of Femoral Head Aseptic Osteonecrosis, *Key Engineering Materials* Vols. 361-363 pp. 1295-1298
2. Pascal-Moussellard, H., Aguado, E., Catonné, Y., Rouvillain, J.L., Daculsi, G. (2003) Evaluation of an intervertebral cervical cage filled with injectable bone substitute, *Cervical Spine Research Society* (poster)
3. Daculsi, G., Moussellard, H., Goyenvallé, E., Pilet, P., Delplace, S., Aguado, E. (2005) Minimal invasive surgery in spine, new development of injectable ceramic MBCP for vertebral body bone filling: in vivo experiment, *Key Engineering Materials* Vols. 284-286, pp.803-806
4. Weiss, P., Clergeau, L.P., Enckel, B., Amouriq, Y., Giumelli, B., Jean, A., Daculsi, G. (2005) A New Injectable Bone Substitute Concept (MBCP Gel™): First Clinical Results in Human Maxillo-Facial Surgery, *Key Engineering Materials* Vols. 284-286 pp. 1053-1056
5. Daculsi, G., LeGeros, R., T. Kokubo (2008) Tricalcium phosphate/hydroxyapatite biphasic calcium phosphate (BCP) bioceramics, in *Bioceramics and their clinical applications*, editor, Woodhead publishing, pp 395-4242
6. Davy, A., Gauthier, O., and al. (2004) Assessment of Cancellous Bone Architecture after Implantation of an Injectable Bone Substitute, Catherine., *Key Engineering Materials* Vols. 254-256 pp. 55-5842
7. Daculsi, G., Lazennec, J.Y., Catonné, Y., Saillant, G., Pascal-Moussellard, H. (2008) Les cages intervertébrales cervicales, analyse critique de la littérature, *Maîtrise Orthopédique* 2005, 147 : 8-17 Vols. 361-363 pp. 1295-1298

* Data on file, Biomatlante

Manufacturer:
BIOMATLANTE
Z.A. Les Quatre Nations
5 Rue Edouard Belin
44360 Vigneux-de-Bretagne — France

www.biomatlante.com

CE 0123

Distributed by:

MBCP™ and In'Oss™ are trademarks of Biomatlante