

# UBGEN<sup>®</sup> PRODUCT CATALOGUE



The Earth: a grain of sand in a vast cosmic arena. To date, the only known world capable of supporting life. Everyone we love and every human being has lived their existence here. This is where we are. This is our home. This is who we are. This is why we have decided to dedicate our professional lives to improving the lives of other people. To achieve this, we have undertaken difficult and risky paths. Indeed, considered by many to be impossible. With the awareness that failures would be greater in number than successes. But life is only worth living if we realize our uniqueness by kindly caring for each other. Within this type of approach, each of us has one primary mission, and only one: to fulfil their potential in harmony with their surroundings.





 **UBGEN**



A scenic landscape photograph featuring rolling green hills. In the foreground, there is a field of tall, vibrant green grass. A brown cow is grazing in the middle ground on a grassy slope. The background shows more hills, a pond, and a dense forest of tall trees under a soft, overcast sky.

A complete range of **solutions**  
for **tissue** regeneration that meet  
multiple **needs** in bone regenerative  
surgery.



# UBGEN® SPECIALISTS IN BONE SURGERY IN DENTISTRY

## WE TAKE CARE OF PEOPLE FOR A NEW ETHIC OF WELLBEING

By carefully listening to dentists in their daily clinical practice, we convey our commitment to offering innovative solutions that protect patient's health and shorten healing times.

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# UBGEN® PRESENTS THE OTiGEN SYSTEM

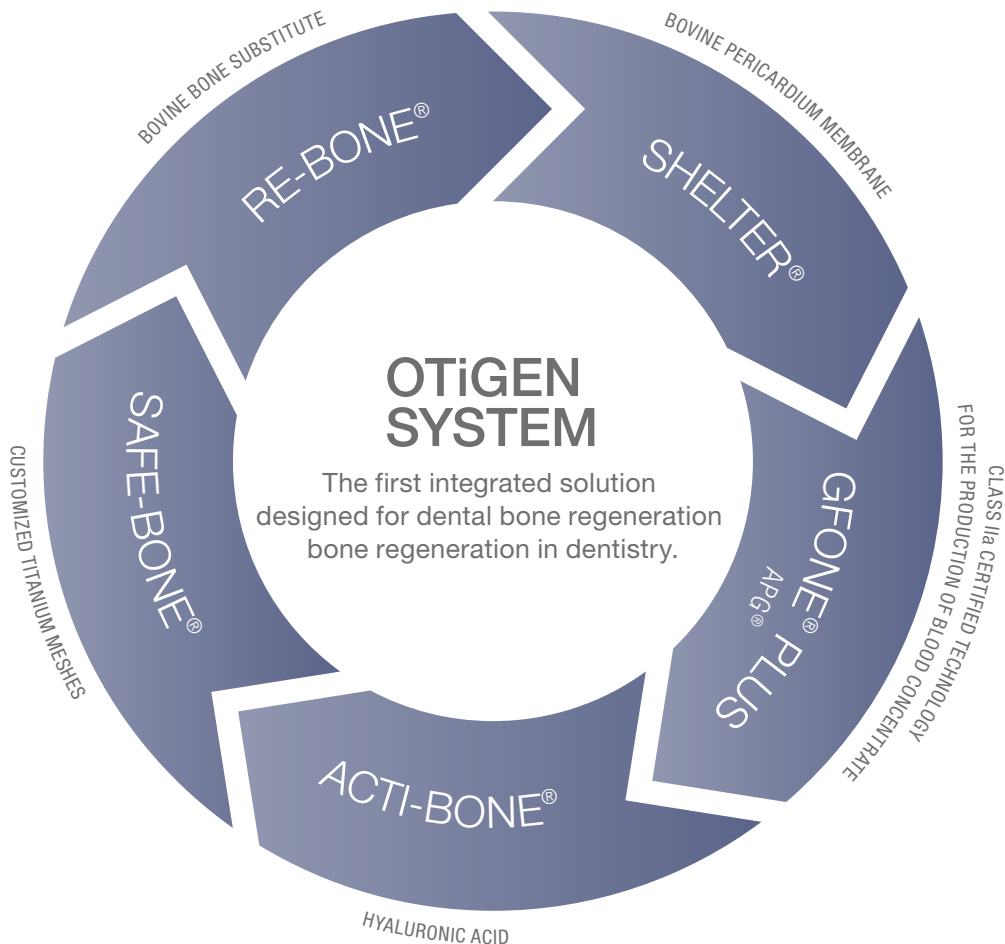
The panorama of companies operating in the biomedical sector in Europe is made up of different firms that offer Users a wide range of choices in terms of the most suitable partner for their needs.

At UBGEN® we strongly believe in technological innovation, to the point that every investment is an essential step to anticipate the future.

This enables us to adapt to a constantly changing market.

Our corporate responsibility focuses on bone surgery in dentistry and is aimed towards creating solutions that put the health and well-being of patients first.





This is why at UBGEN® we have created the **OTiGEN SYSTEM**: the first system of products and services designed to work in synergy with the requests of clinicians in the dental field.

OTiGEN SYSTEM is the link that allows clinicians to have a single commercial partner able to respond to all their needs across all phases, from choosing the graft, up to healing of the tissues.

For our partners, this means having the first and only integrated system where each component has been designed to interact with the others, thus ensuring full compatibility and predictability of results.

# UBGEN<sup>®</sup> RE-BONE<sup>®</sup> BOVINE BONE SUBSTITUTE

A specific line of bone substitutes of bovine origin treated at low temperature to promote the regeneration of hard tissues in bone reconstruction surgery.

## RE-BONE®

The bone substitute of bovine origin treated at low temperature through the innovative Thermagen production process, produced by an entirely Italian supply chain.

Compared to the presence on the market of bone substitutes of bovine origin treated at high temperatures or produced with raw materials from other sources (porcine, equine, synthetic), at UBGEN® we enhance the winning characteristics of the bovine bone substitute with the Thermagen innovative production process at low temperatures. Thanks to this protocol, we are able to avoid the so-called "ceramization" of the bone substitute, thus ensuring its total resorption and giving it high biocompatibility as well as adequate macro/microporosity.

The decellularization process of the Thermagen raw material was developed by a team of internal and external bioengineering experts and subsequently proven by tests performed by authoritative University Departments.

Together with the Thermagen production process, it is the choice of the raw material that makes the difference. At UBGEN® we are aware of the details of each step of the production chain: from the wholesomeness of the land used for grazing, to the natural cultivation used for the production of forage, to the healthful state of the facilities that welcome the animals themselves.

If animals live and grow well, in a healthy environment, that is respected in its territorial characteristics, the derived products intrinsically meet the health and safety requirements.

*RE-BONE® is a bone substitute that is very similar to human bone tissue. Therefore, it is able to create an environment favourable to chemotaxis, osteoblast proliferation and neoangiogenesis thanks to the maintenance of the native three-dimensional structure of the extracellular matrix.<sup>1</sup>*

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1. Gardin C, Ricci S, Ferroni L, Guazzo R, Sbricoli L, DeBenedictis G, Finotti L, Isola M, Bressan E, Zavan B. Decellularization and Delipidation Protocols of Bovine Bone and Pericardium for Bone Grafting and Guided Bone Regeneration Procedure PLOSONE|DOI:10.1371/July20,2015

FIG. 1 - Hematoxylin/eosin stain.  
Histological section of untreated bovine bone (20x)

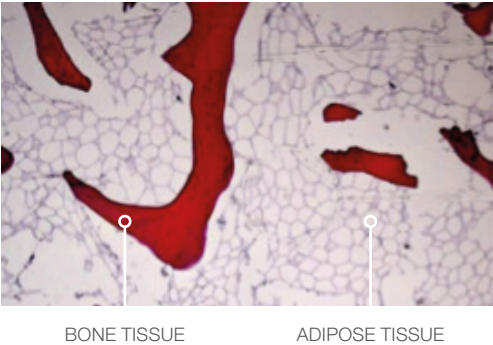
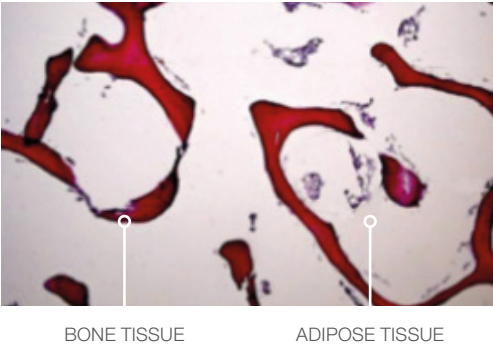


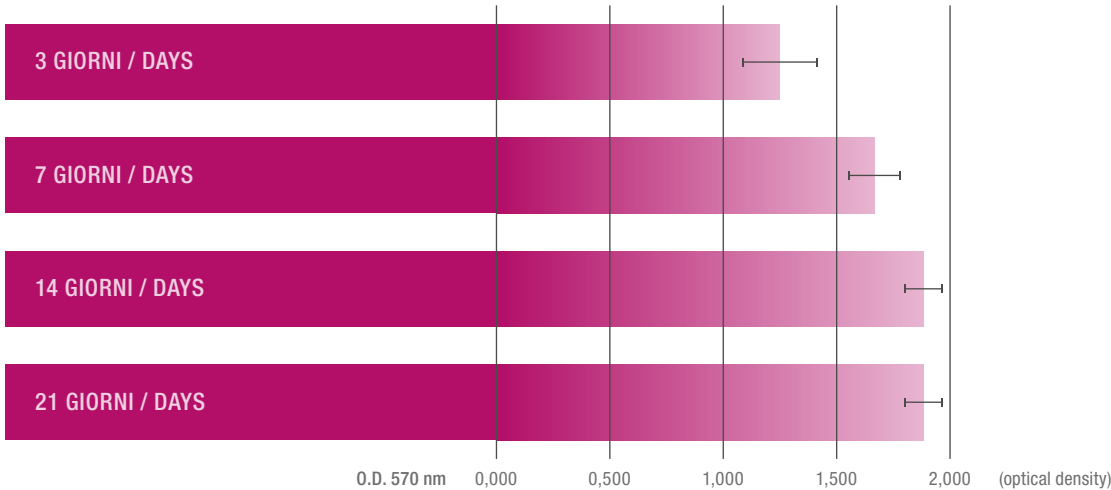
FIG. 2 - Hematoxylin/eosin stain.  
Histological section of RE-BONE®.



## Biocompatibility of RE-BONE® bone substitute

Laboratory studies and scientific literature have demonstrated the regenerative efficacy of RE-BONE® bone substitute produced by UBGEN®.

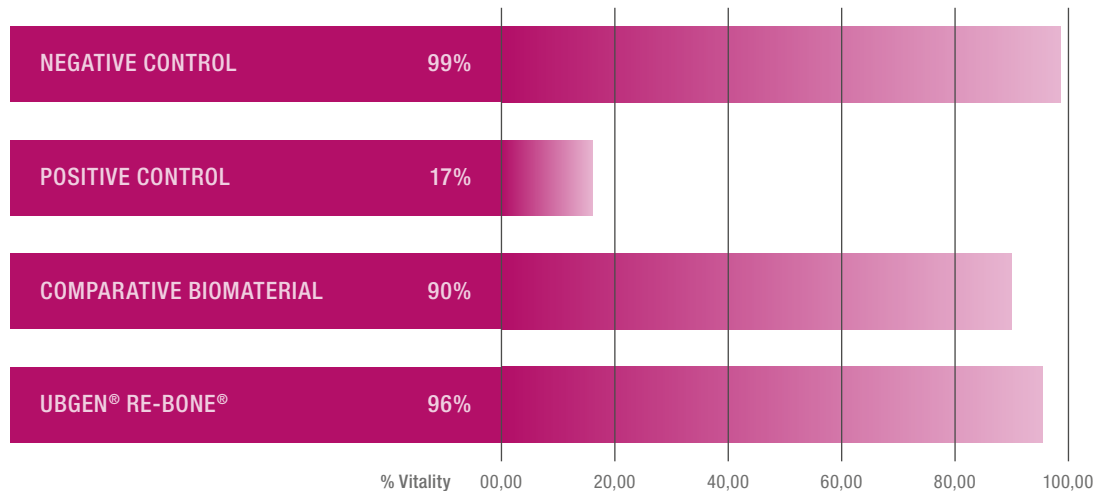
FIG. 3 - Proliferation ADSC (Adipose Derived Stem Cells) in culture on RE-BONE® bone substitute evaluated at different time intervals (MTT test).



By cultivating adipose-derived mesenchymal stem cells with RE-BONE® bone substitute, an increase in cell proliferation was documented, **until reaching 35% more cells than the starting cell population after a 14-day cell culture.**



FIG. 4 - Cellular viability test of osteoblasts.



Cell viability tests of osteoblasts cultured with RE-BONE® bone substitute or with other commercially available bovine-derived biomaterials have shown increased cell survival: 90% (comparison sample) versus 96% (RE-BONE® sample).

## Osteoconductive capability

Osteoconductivity is the ability of the graft to ensure adhesion, survival and proliferation of the osteogenic cells, providing an interconnected structure through which the new cells can migrate and the new vessels can form.<sup>2</sup>

*Studies conducted on animal models and humans in the maxillary sinus lift procedure have shown that the RE-BONE® bone substitute is capable of inducing excellent guided bone regeneration (GBR - Guided Bone Regeneration).<sup>3</sup>*

2. Finkemeier CG. Bone-grafting and bone-graft substitutes. Journal of Bone & Joint Surgery. 2002, 84:454-464.

3. Maxillary sinus augmentation with decellularized bovine compact particles: a radiological, clinical and histologic report of 4 cases. Antonio Scarano. BioMed Research International 2017.

## Microporosity of the mineral structure

In literature it is widely documented that the microporosity of biomaterials is an important factor for tissue regeneration.

By increasing the contact surface of the graft with the cells of the surrounding tissue, the possibility for the biomaterials to be colonized by bone progenitor cells is increased.

Nanostructured biomaterials, in fact, mimic the extracellular matrix of the natural bone, creating a micro-environment that promotes cell adhesion, proliferation and differentiation.<sup>4</sup>

Scanning electron microscope (SEM) analyses were therefore conducted to qualitatively evaluate the microporosity of the RE-BONE® bone substitute.

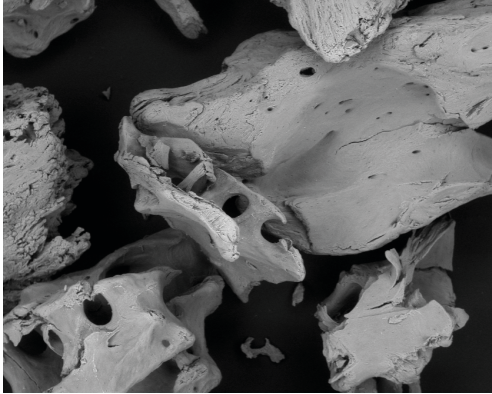
*The SEM analyses to qualitatively evaluate the microporosity of the RE-BONE® bone substitute demonstrate how the micro-roughness of the material, in terms of opening, cracking and non-continuity of the surface, is also present at a microscopic level (compatible with the cellular dimensions of the osteoblasts).*

*The presence of cracks inside the granule is also evident, which will allow the cells and blood vessels to colonize the graft in depth, shortening the resorption time of the bone substitute itself.*

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4. Gardin C, Ferroni L, Favero L, Stellini E, Stomaci D, Sivoilella S, Bressan E, Zavan B. Nanostructured Biomaterials for Tissue Engineered Bone Tissue Reconstruction. International Journal of Molecular. Science. 2012, 13: 737-757.

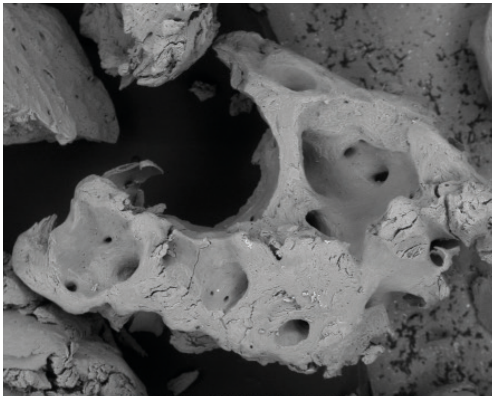
RE-BONE® Granules 100x



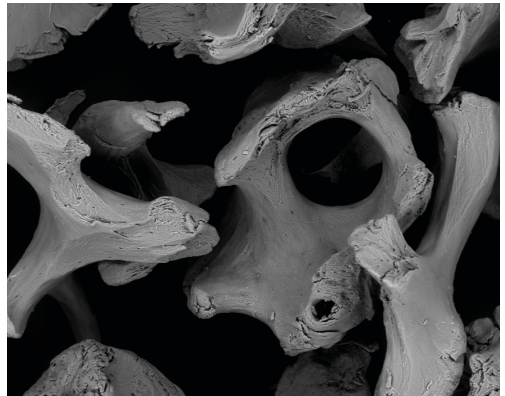
RE-BONE® Granules 100x



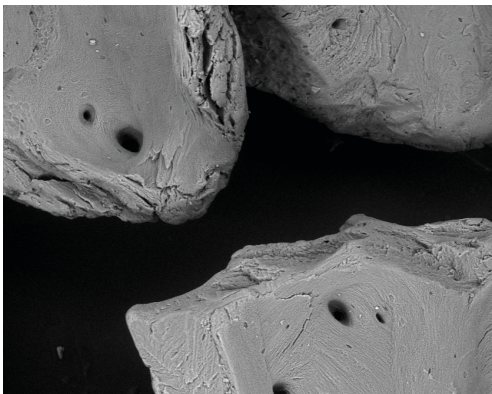
RE-BONE® Granules 150x



RE-BONE® Granules 195x



RE-BONE® Granules 300x





# RE-BONE® CLINICAL APPLICATIONS

Maintenance of socket and bone crest, maxillary sinus lift surgery, horizontal augmentation in two-walled defects, vertical augmentation in two-walled defects, dehiscences and fenestrations in peri-implant lesions, periodontal regeneration in infrabony defects and 2-3 wall furcation defects.





## RE-BONE®

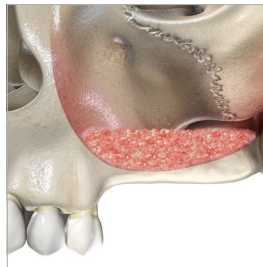
Clinical applications.

Maintenance of alveolus  
and bone crest.

Maxillary sinus lift surgery.

Horizontal augmentation  
in 2-wall defects.

### Granules



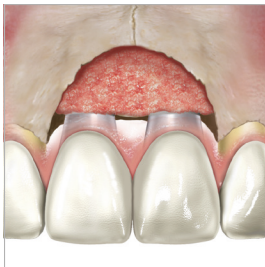
### Syringe



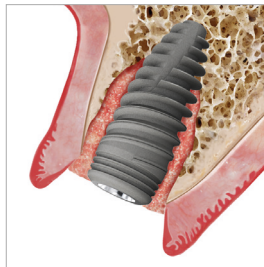
### Block



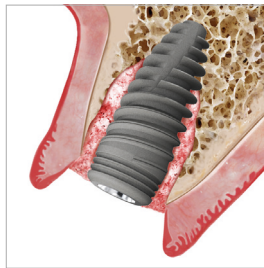
Vertical augmentation  
in 2-wall defects.



Dehiscences and  
fenestrations in peri-implant  
lesions.



Periodontal regeneration in  
intra-osseous defects and  
2-3 wall furcation defects.<sup>5</sup>



5. Bressan E, Favero V, Gardin C, Ferroni L, Iacobellis L, Favero L, Vindigni V, Berengo M, Sivoletta S, Zavan B. Biopolymers for Hard and Soft Engineered Tissue: Application in Odontoiatric and Plastic Surgery Field. Polymers 2011, 3:509-526.

PRODUCT	PACKAGING	CODE
RE-BONE®	Cortico-cancellous granules 0.25g - 0.25-1 mm	BM01A (pack of 1) BM01A6 (pack of 6)
	Cortico-cancellous granules 0.5g - 0.25-1 mm	BM01B (pack of 1) BM01B6 (pack of 6)
	Cortico-cancellous granules 1g - 0.25-1 mm	BM01C (pack of 1) BM01C6 (pack of 6)
	Cortico-cancellous granules 2g - 0.25-1 mm	BM01D (pack of 1) BM01D6 (pack of 6)
	Cortico-cancellous granules 0.5g - 1-2 mm	BM01E (pack of 1) BM01E6 (pack of 6)
	Cortico-cancellous granules 1g - 1-2 mm	BM01F (pack of 1) BM01F6 (pack of 6)
	Cortico-cancellous granules 2g - 1-2 mm	BM01G (pack of 1) BM01G6 (pack of 6)
	Cortico-cancellous granules 5g - 1-2 mm	BM01H (pack of 1) BM01H6 (pack of 6)

PRODUCT	PACKAGING	CODE
RE-BONE®	Cancellous granules 0.25g - 0.25-1 mm	BM01I (pack of 1) BM01I6 (pack of 6)
	Cancellous granules 0.5g - 0.25-1 mm	BM01J (pack of 1) BM01J6 (pack of 6)
	Cancellous granules 1g - 0.25-1 mm	BM01K (pack of 1) BM01K6 (pack of 6)
	Cancellous granules 2g - 0.25-1 mm	BM01L (pack of 1) BM01L6 (pack of 6)
	Cancellous granules 0.5g - 1-2 mm	BM01M (pack of 1) BM01M6 (pack of 6)
	Cancellous granules 1g - 1-2 mm	BM01N (pack of 1) BM01N6 (pack of 6)
	Cancellous granules 2g - 1-2 mm	BM01O (pack of 1) BM01O6 (pack of 6)
	Cancellous granules 5g - 1-2 mm	BM01P (pack of 1) BM01P6 (pack of 6)



PRODUCT	PACKAGING	CODE
RE-BONE®	Block of 10x10x10 mm	BM02A (pack of 1)
	Block of 10x10x20 mm	BM02B (pack of 1)

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PRODUCT	PACKAGING	CODE
RE-BONE®	Syringe of 0.25g for granules of 0.25-1mm	BM03A
	Syringe of 0.5g for granules of 0.25-1mm	BM03B
	Syringe of 0.5g for granules of 1-2mm	BM03C
	Syringe of 1g for granules of 0.25-1mm	BM03BA
	Syringe of 1.5g for granules of 0.25-1mm	BM03BB
	Syringe of 2g for granules of 0.25-1mm	BM03BC
	Syringe of 1g for granules of 1-2mm	BM03CA
	Syringe of 1.5g for granules of 1-2mm	BM03CB
	Syringe of 2g for granules of 1-2mm	BM03CC

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\* Under Certification

# UBGEN® SHELTER® BOVINE PERICARDIUM MEMBRANE

A complete line of bovine pericardium membranes with different resorption times and thicknesses, designed to promote healing processes in bone regeneration surgery.

## SHELTER®

The resorbable bovine pericardium membrane specifically designed for bone surgery in dentistry and produced by an entirely Italian supply chain.

At UBGEN® we have developed two types of membranes capable of using the beneficial effects of bovine pericardium which acts as a natural protective barrier:

- **SHELTER® FAST**

Membrane with natural resorption of 4-5 weeks and excellent traction resilience, thanks to the intertwined structure of the collagen fibres.

- **SHELTER® SLOW**

Slow resorption membrane (4-6 months) thanks to the reinforced bonds of the collagen fibres, made more resistant by the **Pericross** cross-linking process capable of making the membrane resorbable in the long-term compared to the SHELTER® FAST version.

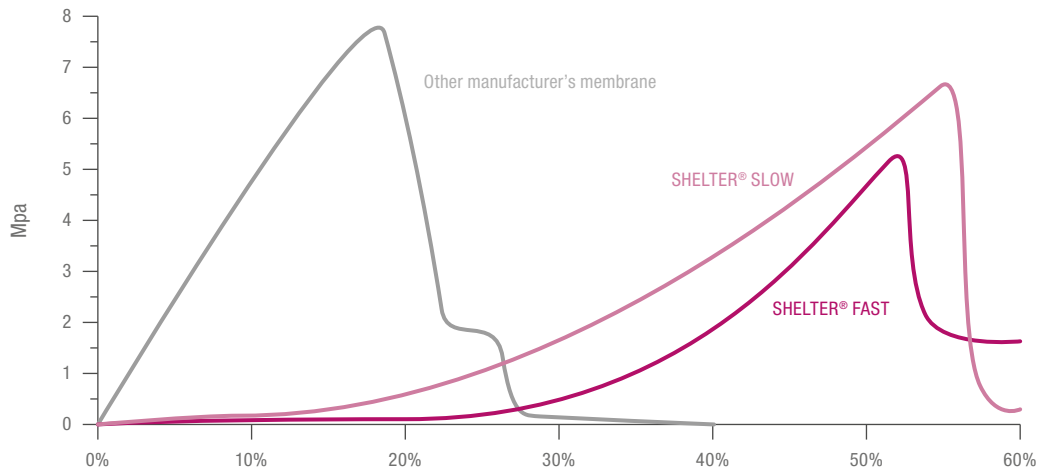
In the thicker version, it can replace non-resorbable solutions in some types of surgery with the benefit of being completely reabsorbed and allowing to avoid the second removal surgery.

SHELTER® FAST and SHELTER® SLOW are occlusive to the passage of cells. They are designed to promote osteoblastic and periodontal ligament cells proliferation, protecting the site from soft tissue colonization; stable and resistant to traction, they are easy and manageable during placement.

## Mechanical properties

SHELTER® membranes have been tested through mechanical traction tests from which it has been possible to obtain stress/strain curves (FIG. 5) with a characteristic trend of collagen materials as proof of the fact that the UBGEN®, production processes, and Pericross in particular, keep the structure of the collagen fibres and other components, such as elastin, intact.

FIG. 5 - Stress/strain curve for pericardium membrane



*Zone 1: alignment of the fibres with very low elastic modulus. It indicates the need for a very low force to stretch the membrane.*

*Zone 2: the collagen fibrils are realigned with the direction of the effort and begin to oppose a certain resistance due to the inter and intra-molecular bonds.*

*Zone 3: inter-fibrillar bonds break and plastic deformation occurs until the sample breaks.*

Based on the results obtained, it can be asserted that, even in hydrated conditions, SHELTER® FAST and SHELTER® SLOW have the typical natural structure of the pericardium:

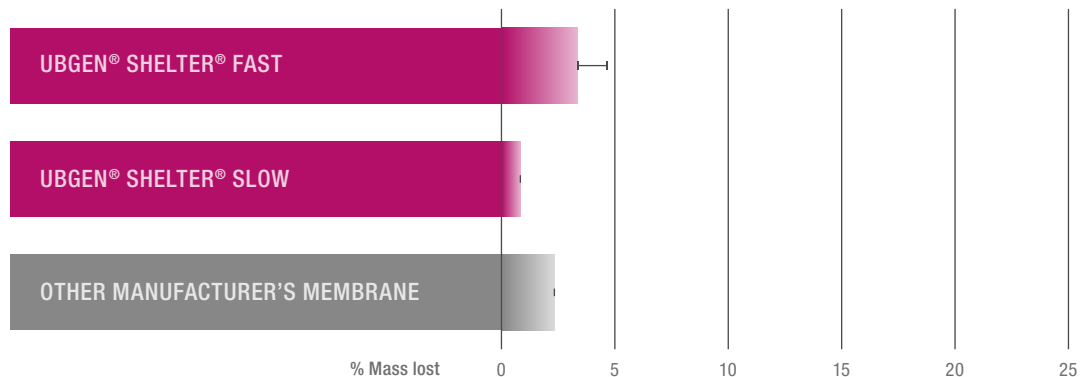
- a first region of fibrillar alignment
- an area of resistance to stress
- a third phase of gradual breaking with fibres that continue to hold the membrane together and in situ.

*The graph clearly shows that the SHELTER® SLOW membrane requires higher tractive stress to reach the breaking point, indicating greater resistance to degradation.*

## Resorption properties

The SHELTER® FAST and SHELTER® SLOW membranes have also been subjected to *in vitro* degradation tests.

FIG. 6 - In vitro degradation tests conducted on SHELTER® FAST and SHELTER® SLOW compared to another manufacturer's membrane.



*The cross-linking process of the SHELTER® SLOW membrane allows the latter to be reabsorbed in a longer period of time (4-6 months).*

*This is due to the greater number of intramolecular bonds between the collagen fibrils.*

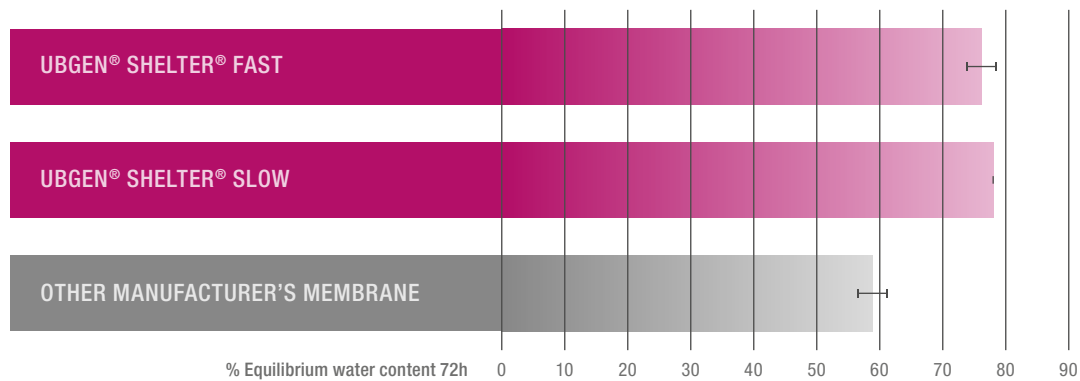
*The SHELTER® FAST membrane, on the other hand, has a certified degradation time of 4-5 weeks.*



## Properties of hydration

The SHELTER® production process allows the membrane to maintain the reticular structure of the collagen matrix conferring a certain porosity after dehydration (FIG. 7).

FIG. 7 - Dehydration tests conducted on SHELTER® FAST and SHELTER® SLOW compared to another manufacturer's membrane.



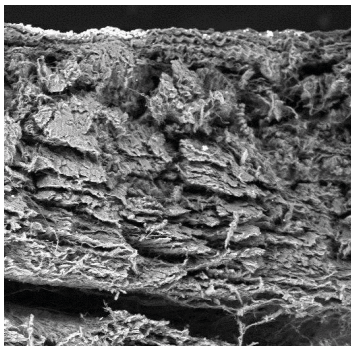
*In vitro studies have shown that the SHELTER® membrane is highly hydrophilic, as it is capable of rapidly absorbing the solution it comes into contact with, while maintaining its three-dimensional structure (without collapsing).*

*Following hydration, SHELTER® acquires high adhesive properties and adaptation to surfaces: this is extremely important for applications in which the membrane must be used and must conform even to very irregular surfaces.*

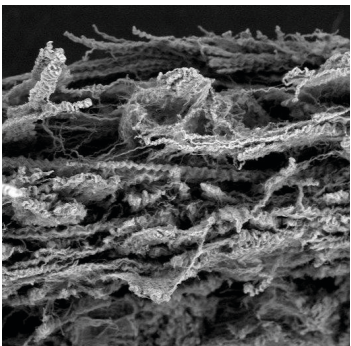
From this it can be seen that SHELTER® FAST and SHELTER® SLOW membranes are suitable for applications in the regeneration of alveolar bone tissue using the GBR and GTR techniques.

*Their ability to hydrate makes them easy to handle, able to adhere to irregular surfaces even in difficult to reach positions.*

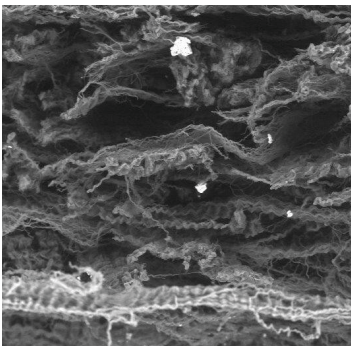
# Images under scanning electron microscope (SEM)



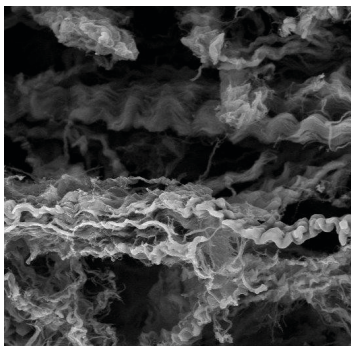
SHELTER® FAST,  
cross-section, 100 μm



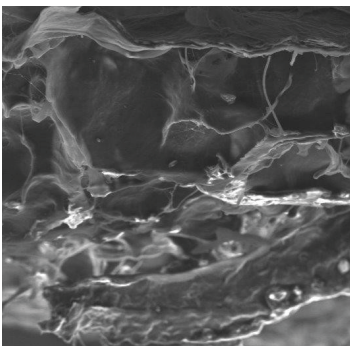
SHELTER® FAST,  
cross-section, 100 μm



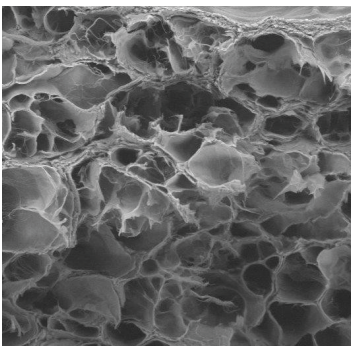
SHELTER® FAST,  
cross-section, 100 μm



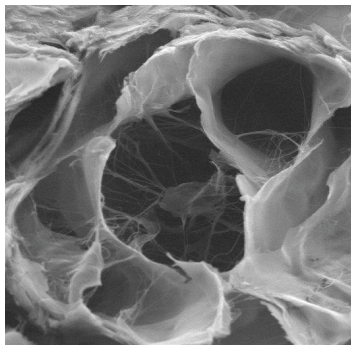
SHELTER® FAST,  
cross-section, 10 μm



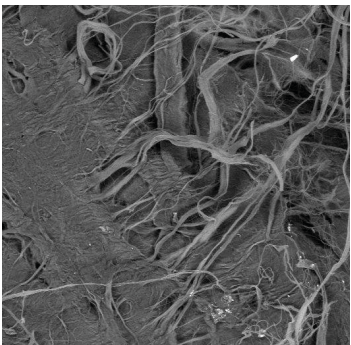
SHELTER® SLOW,  
cross-section, 100 μm



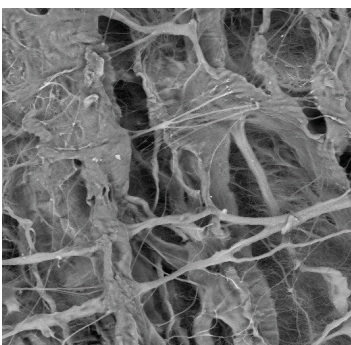
SHELTER® SLOW,  
cross-section, 100 μm



SHELTER® SLOW,  
cross-section, 20 μm



SHELTER® SLOW,  
plane, 100 μm



SHELTER® SLOW,  
plane, 10 μm

# SHELTER® CLINICAL APPLICATIONS

Maintenance of socket and bone crest, maxillary sinus lift surgery, horizontal augmentation in two-walled defects, vertical augmentation in two-walled defects, dehiscences and fenestrations in peri-implant lesions, periodontal regeneration in infrabony defects and 2-3 wall furcation defects.





# SHELTER®

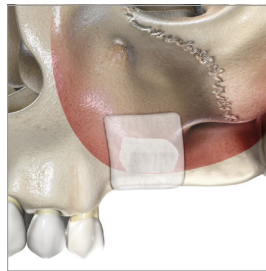
Clinical applications.

Maintenance of alveolus  
and bone crest.

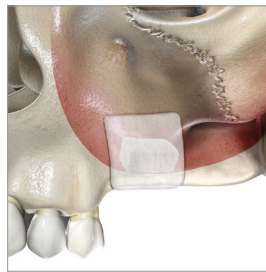
Maxillary sinus lift surgery.

Horizontal augmentation in  
2-wall defects.

FAST  
membrane



SLOW  
membrane

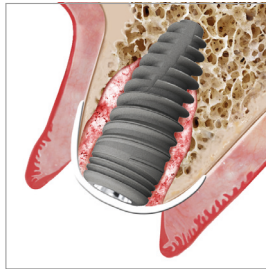




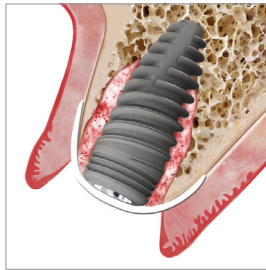
Vertical augmentation in  
2-wall defects.



Dehiscences and  
fenestrations in peri-implant  
lesions.



Periodontal regeneration in  
intra-osseous defects and  
2-3 wall furcation defects.<sup>5</sup>



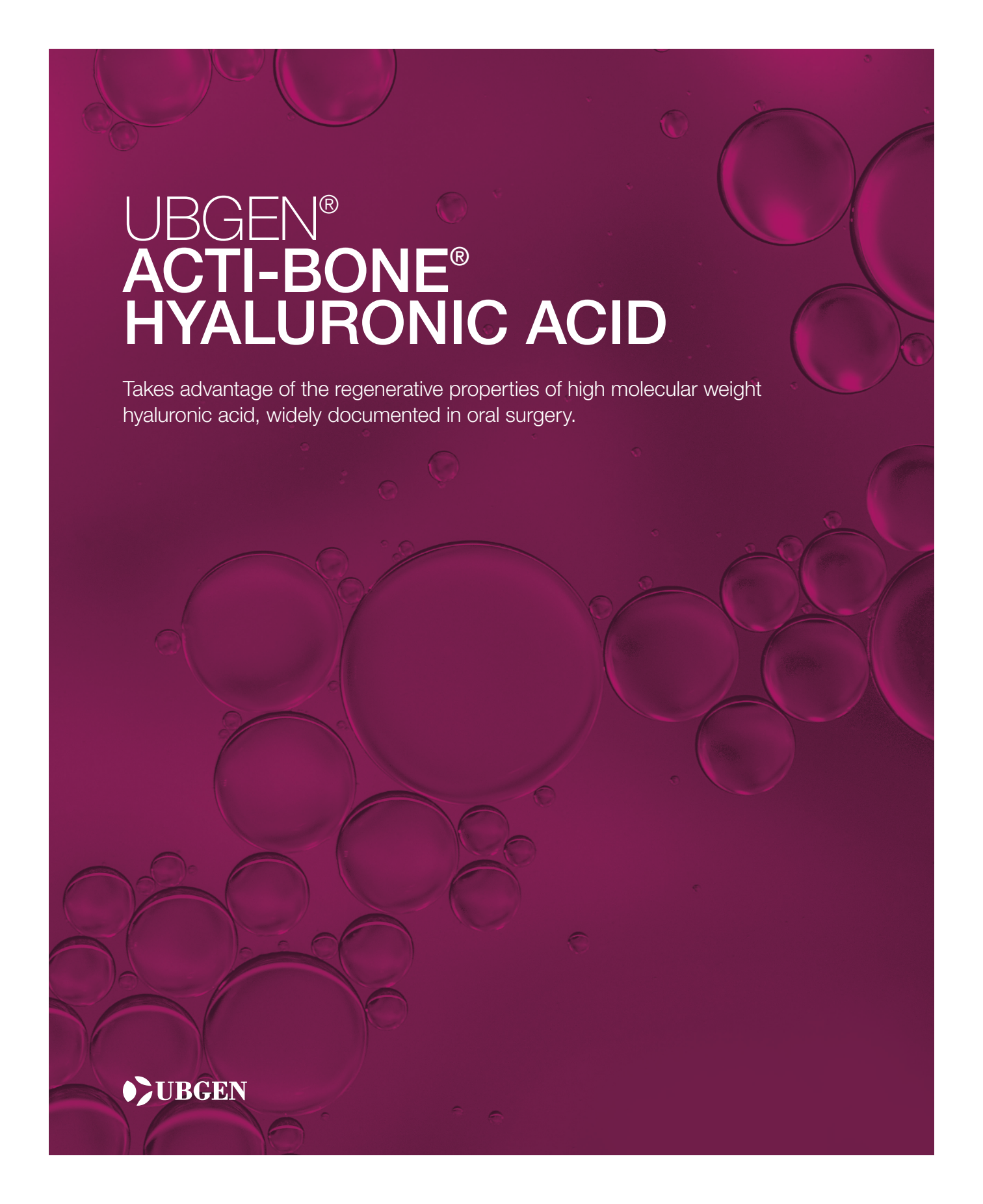
5. Bressan E, Favero V, Gardin C, Ferroni L, Iacobellis L, Favero L, Vindigni V, Berengo M, Sivoletta S, Zavan B. Biopolymers for Hard and Soft Engineered Tissue: Application in Odontoiatric and Plastic Surgery Field. *Polymers* 2011, 3:509-526.

PRODUCT	PACKAGING	CODE
SHELTER® F	Pericardium membrane 15x20x0.2 mm	BMF04A
	Pericardium membrane 30x25x0.2 mm	BMF04B
	Pericardium membrane 50x30x0.2 mm	BMF04C
	Pericardium membrane 15x20x0.4 mm	BMF04D
	Pericardium membrane 30x25x0.4 mm	BMF04E
	Pericardium membrane 50x30x0.4 mm	BMF04F
	Pericardium membrane 15x20x0.8 mm	BMF04G
	Pericardium membrane 30x25x0.8 mm	BMF04H
	Pericardium membrane 50x30x0.8 mm	BMF04I
	Pericardium membrane 15x20x1 mm	BMF04J
	Pericardium membrane 30x25x1 mm	BMF04K
	Pericardium membrane 50x30x1 mm	BMF04L
SHELTER® S	Pericardium membrane 15x20x0.2 mm	BMS05A
	Pericardium membrane 30x25x0.2 mm	BMS05B
	Pericardium membrane 50x30x0.2 mm	BMS05C
	Pericardium membrane 15x20x0.4 mm	BMS05D
	Pericardium membrane 30x25x0.4 mm	BMS05E
	Pericardium membrane 50x30x0.4 mm	BMS05F
	Pericardium membrane 15x20x0.8 mm	BMS05G
	Pericardium membrane 30x25x0.8 mm	BMS05H
	Pericardium membrane 50x30x0.8 mm	BMS05I
	Pericardium membrane 15x20x1 mm	BMF05J
	Pericardium membrane 30x25x1 mm	BMF05K
	Pericardium membrane 50x30x1 mm	BMF05L

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Data on file with RE-BONE®/UBGEN®.



# UBGEN<sup>®</sup> **ACTI-BONE<sup>®</sup>** **HYALURONIC ACID**

Takes advantage of the regenerative properties of high molecular weight hyaluronic acid, widely documented in oral surgery.

## ACTI-BONE®

Hyaluronic acid is one of the main components of connective tissues together with collagen and elastin fibres.

It is a polysaccharide naturally produced by the body in order to protect the tissues and keep them hydrated.

It is possible to apply ACTI-BONE® directly on the surgical site, or use it in combination with RE-BONE® bone substitute to obtain the so-called "sticky bone" or with SHELTER® FAST or SHELTER® SLOW pericardium membranes to enhance their chemotactic capacity.





## **ACTI-BONE<sup>®</sup>, why use it in oral surgery?**

Hyaluronic acid is characterized by the ability to retain a very high amount of water.<sup>1</sup>

### **Anti-inflammatory properties**

Numerous studies report that hyaluronic acid is effective in minimizing the inflammation in the surgical site, thus facilitating bone regeneration.<sup>2</sup>

### **Osteogenic and immunomodulatory properties**

In case of trauma at a local level, hyaluronic acid is naturally produced by the body in order to promote the regeneration of soft tissues.<sup>3</sup>

### **Angiogenic properties**

The ability of hyaluronic acid to interact with specific membrane receptors makes it a stimulating factor for the migration and proliferation of endothelial cells.<sup>4</sup>

### **Fibroblast proliferation**

High molecular weight hyaluronic acid is recognized for its chemotactic and stimulatory properties toward fibroblasts, involved in the synthesis of new collagen.<sup>5</sup>

### **Bacteriostatic effect**

Scientific studies have shown that the clinical application of hyaluronic acid in surgical therapy reduces bacterial contamination of the surgery site and the risk of post-operative infections.<sup>6</sup>

ACTI-BONE<sup>®</sup> finds its specific application in implant, periodontal, and extraction surgery, and in the treatment of peri-implantitis as a powerful adjuvant capable of regenerating bone tissue and protecting the implant and the implant site.

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# UBGEN<sup>®</sup> **SAFE-BONE<sup>®</sup>** **TITANIUM MESH**

Made-to-measure titanium membrane for the regeneration of large bone defects and designed for the specific needs of each patient.

Each reticular structure is customized to obtain a precise product, which accurately reflects the specific anatomical data of the patient.

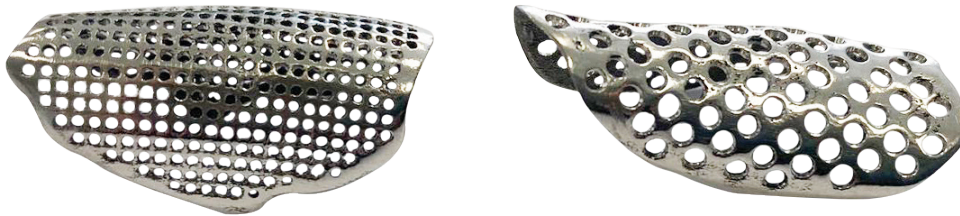


## SAFE-BONE®

### HOW IS IT MADE?

SAFE-BONE® is produced through a selective laser melting process (SLM) using specific grade 5 titanium powders, historically recognized as inert and biocompatible.<sup>1-2</sup>

Each individual titanium mesh is designed to adapt to the patient's anatomical details, based on images created with CAD/CAM and an intra-oral scan provided by the clinician.



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## **WHY USE TITANIUM MESH?**

SAFE-BONE® is the most suitable solution in horizontal and vertical bone defects, in combination with a bone substitute.<sup>3-4</sup>

While any early exposure of a non-resorbable membrane almost always leads to an infection capable of compromising the result of the surgical technique, indeed, several studies show that in case of exposure of the mesh the success of the regeneration is not affected and the regenerated bone volume is maintained.<sup>6-7</sup>

SAFE-BONE® can be used alone or in combination with SHELTER® FAST or SHELTER® SLOW resorbable membranes.

Compared to pre-shaped titanium meshes, SAFE-BONE® offers many advantages, including speed and ease of application, requiring no further modelling or shaping adjustments.

UBGEN® offers the clinician the opportunity to fully customize the SAFE-BONE® structure, allowing for defining the thickness of the mesh, shape and size of the texture, as well as 3D planning of the placement of openings useful for future allocation of the implants.



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# UBGEN<sup>®</sup> PLATELET GROWTH FACTORS

APG<sup>®</sup> (Autologous Platelet Gel).

A cutting-edge technology that exploits the body's natural ability to regenerate after an injury.

## Look deeply into nature to understand change

UBGEN® is the first integrated system for the preparation of platelet concentrates specifically designed for bone surgery in dentistry.

This technology and its applications provide a unique and complete solution in order to simplify the procedure used and certification of the method, allowing the clinician to achieve exclusive benefits in terms of predictability of results.

## The role of platelets

Platelets play a key role in controlling the first phase of haemostasis. In recent years, the identification of some special molecules inside them - known as Platelet Growth Factors - has revealed new perspectives and possible applications in the medical and surgical field.

*Numerous studies in the sector have highlighted the ability of platelets to metabolically stimulate various cell lines. These, in fact, can be induced to release growth factors which immediately intervene to stimulate the regeneration of injured tissues and significantly accelerate healing.*

Each of these identified factors targets a specific cell line (skin, muscle, ligaments and tendons, bone, blood vessels), acting on the metabolism of the treated tissue with a synergistic, anti-inflammatory and reparative action.

## Functions of platelet growth factors

Growth factors are locally and constantly released through continuous platelet degranulation.

Growth factors main properties are listed below:

- *they act proactively toward angiogenic processes;*
- *they are chemotactic towards the cells involved in the regenerative processes;*
- *they are mitogenic toward the cells they come into contact with, triggering a multiplier effect;*
- *they significantly increase cell membrane receptor expression.*

GROWTH FACTORS	EXPECTED EFFECT
PDGF Platelet Derived Growth Factor	Chemotactic for fibroblasts and macrophages, mitogen for fibroblasts, smooth muscle cells, endothelial cells.
TGF- $\beta$ 1/ $\beta$ 2 Transforming Growth Factor	Angiogenesis mediator, chemotactic for fibroblasts, keratinocytes and macrophages.
VEGF Vascular Endothelial Growth Factor	Chemotactic and mitogen for endothelial cells, and a mediator of angiogenesis.
EGF Epidermal Growth Factor	Fibroblast mitogens, endothelial cells, keratinocytes, and an angiogenesis mediator.
FGF Fibroblast Growth Factor	Tissue organisation and regeneration mediator.

Treatment with platelet growth factors is widely used in many branches of medicine (orthopaedics, trichology, ophthalmology...) due to the proven properties of accelerating healing times and for providing significant improvements in the presence of trauma, wounds or injuries.

## The APG® technique

The APG® (Autologous Platelets Gel) technique is the most advanced autologous system for obtaining a Platelets Concentrate.

*This technology is based on the activation of platelets deriving from the patient's own blood. These are concentrated through centrifugation of a small sample of autologous blood (7-10 ml) and used to stimulate and accelerate tissue regeneration.*

The one developed by UBGEN® is a procedure that offers truly extraordinary results in numerous pathologies, without side effects and which significantly reduces the recovery time in case of surgical procedures.

## Patient benefits

Applying APG® to the area to be treated allows for a faster and better-quality healing process.

It involves an autograft, as the patient's own platelets are reused on the same patient to generate and accelerate the reparative processes and tissue regeneration.

*Benefits include:*

- *reduction of pain and risk of infection*
- *improved healing time and quality of hard and soft tissue, thus accelerating osteogenetic processes*
- *possibility of combining it with medicinal products and/or other biomaterials such as grafts, and implants*



## Research and analysis

Several studies, also including tests conducted *in vivo* on animal models, suggest that numerous stimulatory molecules deriving from platelets, such as growth factors, can be used to accelerate the healing process of bone and soft tissues.<sup>6-7</sup>

In particular, a recent *in vitro* study conducted at the University of Chieti has demonstrated that the use of platelet concentrates combined with RE-BONE® allows for obtaining a single material defined as *sticky bone*.

This graft increases the mechanical resistance, creating an actual three-dimensional *scaffold* with high regenerative properties.<sup>8</sup>

The *sticky bone* technique allows to easily fill the bone defect, with reduced dispersion of the granules and a high level of stability. These characteristics allow it to be easily placed in bone defects of various sizes and shapes.

An additional benefit of using the *sticky bone* technique is the slow release of growth factors which lead to better wound healing.

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# APG<sup>®</sup> APPLICATIONS

With its high concentration of growth factors, the APG<sup>®</sup> platelet concentrate can be used in multiple surgical procedures and clinical treatments.



## The APG® concentrate in dentistry

Numerous studies indicate that the use of platelet concentrate improves the final result and significantly increases the patient's well-being and healing speed, both alone and in combination with other surgical techniques, or even as a support for implant devices.

In dentistry, the APG® method is used for:

- accelerating healing of surgical wounds;
- decreasing post-operative inflammation and discomfort;
- surgical treatment of post-extraction sockets in bone regeneration combined with biomaterials;
- maxillary sinus surgery;
- periodontal and mucogingival surgery;
- surgical treatment of patients with bisphosphonate-induced osteonecrosis.

In all these treatments, the adhesive nature of APG® facilitates handling of implant material, in addition to improving haemostasis and wound closure compared to traditional techniques.<sup>9</sup>

*Recent studies have also demonstrated that the use of platelet concentrates in the early stages of healing increases microvascular proliferation, followed by improved osteoblastic activity.*

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## APG® concentrate in cosmetic surgery

*Since APG® concentrate contains a number of growth factors that regulate skin regeneration, it can induce the synthesis of collagen and other components of the skin by stimulating and activating fibroblasts, thereby encouraging skin cells to rejuvenate.*

It has been shown that in aesthetic laser treatments the use of APG® concentrate increases skin elasticity, inducing a greater collagen synthesis by fibroblasts with consequent aesthetic improvement and rapid healing of skin wounds.<sup>10</sup>

The APG® method is used for:

- treating forehead wrinkles, wrinkles around the eyes, nasolabial folds, wrinkles on the neck and on the neckline
- treating acne scars
- toning and reduction of skin relaxation
- treating stretch marks
- treating and re-epithelialising skin wounds and ulcers<sup>11</sup>

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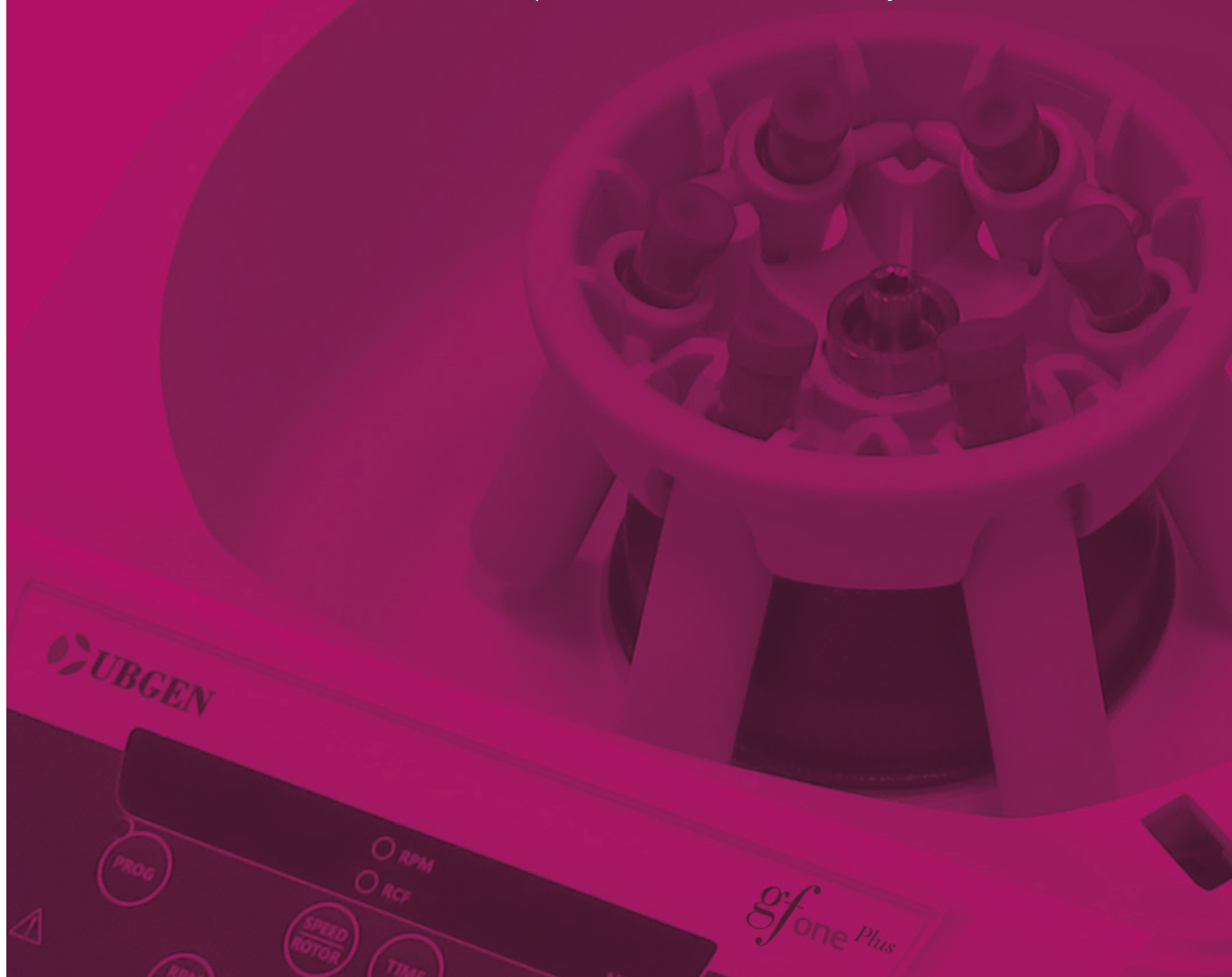






# UBGEN<sup>®</sup> GFONE<sup>®</sup> PLUS BLOOD PHASE SEPARATOR

The certified UBGEN<sup>®</sup>-branded separator dedicated to dentistry.



## GFONE® PLUS blood phase separator

Class IIA medical device specifically designed for the separation of blood components, it is intuitive and easy to use, with the possibility of customizing the programs.



### GFONE® PLUS KIT

Single-use kit for preparation and application of Platelet Gel in the dental field containing:

- 4 blue vials with anticoagulant of 9 ml
- 4 white vials for fractionation of 9 ml
- 2 red vials with serum activator of 9 ml
- 1 syringe of 2.5 ml
- 1 syringe for activator of 1 ml
- 1 21G needle with a safety device for withdrawal
- 1 20G needle



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# UBGEN<sup>®</sup> **SHELTER<sup>®</sup> FIX**

Pin kit for membrane fixation for dental use



## Titanium Fixation

- Titanium Grade 5 medical pins.
- Sterile blisters containing 12 micro pins for hygienic and organized management.
- Safety, speed, and simplicity in membrane fixation.

## Features

The complete membrane fixation system SHELTER® FIX is designed with an ergonomic design that allows for precise and effortless application, even in the presence of hard cortical bone.

The 3.6 mm length of the micro pins ensures optimal membrane fixation, providing stability and safety during the procedure.

Made from grade 5 medical titanium, the micro pins offer superior strength and excellent biocompatibility, essential for surgical use.

The micro pins are packaged in practical sterile blisters of 12 units each, ensuring hygienic and organized management, optimizing their use in the clinical setting and ensuring maximum safety for the professional.

## Benefits

- Simple and precise application.
- Easy and safe removal.
- Versatility of use.
- Excellent bone anchorage properties.





# UBGEN® BONE AND TISSUE MANAGEMENT®

Surgical instruments to support the most advanced oral surgery techniques

## BONE AND TISSUE MANAGEMENT®

To complete the solutions available for clinicians, UBGEN® offers a range of surgical instruments to support the most advanced oral surgery techniques.

### SURGICAL INSTRUMENTS

UBGEN® provides clinicians with a set of surgical instruments designed for the most complex oral and pre-implant regenerative surgery operations: from an innovative tray for periodontal microsurgery, a kit for osteosynthesis and screws for fixing membranes, to a set of expanders for the split crest surgical technique.



## This image shows a full page of blank, lined paper. It features approximately 20 evenly spaced horizontal grey lines across its entire surface, typical of notebook or composition paper. The lines are uniform in thickness and color, providing a guide for handwriting. There are no margins, text, or other markings present on the page.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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