



GF-ONE®

Innovation,
competitiveness,
reliability.



UBGEN®: Generate new business by regenerating health.

To generate is to give life, get results, profitability, news.

To regenerate is to take care of, rebuild, heal.

UBGEN's name, which stands for Ultra Bone Generation, contains the genes of origin of new innovative business models in the biotechnology industry for the repair and regeneration of hard and soft tissue.

Marco Manno, founder and CEO explains.

The simple way: Intuition for business.

Some companies are inherited, others are acquired; others are born as a brain flash, running through the mind of their founder.

At the International Dental Show in Cologne, in March 2007, as I searched in vain for a manufacturer of biomaterials to distribute on the Italian market, the thought occurred to me to create a start-up company dedicated to the circulation and commercialisation of innovative biomedical technology for tissue engineering in the dental industry.

The opportunity to go forward with my insight came during the Masters at Sole 24Ore, in which my project work was awarded as the best among the 7 presented by the faculty.

The pride and happiness made me realise that the dream could well become reality, it was up to me.

Our products:
Concreteness and results.



The courageous way: The practice of innovative models.

Thanks to the support and valuable guidance of fellow entrepreneurs and professionals, the idea was transformed into a studio project, which also involved the Department of Biology at the University of Padua.

The morning that the Rector of the University at the time, Prof. Rizzuto, confirmed the willingness of his team to work on the development of the bone matrix de-antigenation process, and it was beginning to get serious: I was sitting at the table in his office, in full suit and tie, outwardly calm and collected, while the excitement of reaching my goal made my heart pound.

The die was cast.

The complex way: Perseverance through difficulties.

Once the bovine bone de-proteinisation process was defined, we moved on to the animal testing stage, the birth of the UBGEN® start-up, to be equipped with a clean-room and with all machinery required to obtain the final product, testing on human beings, right up to the great unknown: Obtaining certifications from the National Institute of Health, which required compliance with innumerable formalities and appeared to be one of the most difficult issues to be addressed for the success of the project.

The bureaucracy didn't help our work: Each time we solved a problem, another one would pop up, then another, in an interminable, depressing sequence that seemed never-ending, but the tenacity, perseverance and constancy of my wife and all the staff led us to the result: While we were fighting with the paperwork and technical dossiers required for certifications, we didn't know yet that we'd be the first to obtain them at national level.

The conscious way: The power of decision.

Every idea requires great courage to achieve it. When it was time to start, I really found myself alone: People who were initially so enthusiastic drew back, but the clarity of my goals, and the support of my wife and the staff gave me strength and determination.

Conscious of my role to generate business in a world that changes very quickly, I have been committed from the outset to looking beyond and diversifying products and services, while maintaining focus on the chosen field: Tissue engineering.



GF-ONE®

APG® (Autologous Platelets Gel)

This cutting edge technology exploits
the body's natural ability to
heal itself after injury.

The role of platelets

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

Numerous biochemical studies have shown a growth-stimulatory effect on different cell lines, with platelets acting as metabolic inducers: They release growth factors that immediately come into action, stimulate the regeneration of damaged tissues for longer, and significantly accelerate the healing process.

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 released locally at a constant rate through continuous platelet degranulation, allowing us to:

- _ *Increase target cell proliferation, exerting a direct stimulus;*
- _ *Revascularise the injured area (neoangiogenesis);*
- _ *Reduce the degree of tissue degeneration and cell death (apoptosis) of the injured tissues.*

APG® GROWTH FACTORS	EXPECTED EFFECT
PDGF Platelet Derived Growth Factor	A chemotactic for fibroblasts and macrophages, a mitogen for fibroblasts, smooth muscle cells, endothelial cells.
TGF-β1/β2 Transforming Growth Factor	A mediator of angiogenesis, a chemotactic for fibroblasts, keratinocytes and macrophages.
VEGF Vascular Endothelial Growth Factor	A chemotactic and mitogen for endothelial cells, and a mediator of angiogenesis.
EGF Epidermal Growth Factor	A mitogen for fibroblasts, endothelial cells, keratinocytes, and a mediator of angiogenesis.
FGF Fibroblast Growth Factor	A mediator of tissue organisation and regeneration.
Proinflammatory Cytokines IL1, IL6, THF-α	Plays an important role in the early stages of tissue repair.
Serotonin, histamine, dopamine, calcium, adenosine.	Impact on tissue regeneration.



The APG® technique

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

It is based on the activation of the patient's own platelets, which are concentrated via centrifugation of a small sample of autologous blood (7-10 ml), and used to stimulate and accelerate tissue regeneration.

This method offers extraordinary results against many diseases, without side effects, and greatly reduces recovery time after surgery.

Patient benefits

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

Technically, it is an autograft as the patient's own platelets are reused on the same patient to trigger and accelerate the reparative processes and tissue regeneration.¹⁻⁴

Benefits include:

- _ Reduced risk of infection and pain relief;*
- _ Improved healing time and quality of hard & soft tissue;*
- _ Possibility of combining it with drugs and/or other biomaterials such as grafts and implants.*

Clinical studies with the University of Chieti-Pescara

UBGEN studies the effects of the APG® technique on different tissue types in collaboration with Dr. Antonio Scarano, University of Chieti-Pescara.

One of the latest published studies¹⁷⁻¹⁸ showed the efficacy of platelet concentrates in soft tissue regeneration through the bio-stimulation of fibroblasts. The study includes the addition of β -TCP particles (beta tricalcium phosphate) with APG® which are then injected under the skin.

Histological and micro-tomography studies have shown that the combination of these substances preserves the skin's morphology without any immune response thus promoting the regeneration of soft tissues.

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1. Arshdeep, Kumaran M S. Platelet-rich plasma in dermatology: Boon or a bane? Indian J Dermatol Venereol Leprol 2014;80:5- 14.
 2. Ning Zhang, Yong-Ping Wu, Sheng-Jun Qian, Chong Teng, Shuai Chen, and Hang Li Research Progress in the Mechanism of Effect of PRP in Bone Deficiency Healing Hindawi Publishing Corporation The Scientific World Journal Volume 2013, Article ID 134582, 7 pages <http://dx.doi.org/10.1155/2013/134582>.
 3. Department of Orthopaedics and Rehabilitation, University of Iowa <http://uiortho.com/index.php/prp.html>
 4. Albanese et al. Immunity & Ageing 2013, 10:23 Platelet-rich plasma (PRP) in dental and oral surgery: from the wound healing to bone regeneration <http://www.immunityageing.com/content/10/1/23>.
 17. Soft Tissue Augmentation with Autologous Platelet Gel and β -TCP: A Histologic and Histometric Study in Mice. Antonio Scarano, Maurizio Ceccarelli, Massimiliano Marchetti, Adriano Piattelli, and Carmen Mortellaro. Biomed Res Int. 2016; 2016: 2078104. Published online 2016 Jul 12. doi: 10.1155/2016/2078104
 18. Soft Tissue Augmentation of the Face With Autologous Platelet-Derived Growth Factors and Tricalcium Phosphate. Microtomography Evaluation of Mice. Scarano, Antonio DDS, MD; Valbonetti, Luca DVM; Marchetti, Massimiliano MD; Lorusso, Felice DDS; Ceccarelli, Maurizio MD, PhD. Journal of Craniofacial Surgery: July 2016 - Volume 27 - Issue 5 - p 1212-1214 doi: 10.1097/SCS.0000000000002712



APG[®] applications

With its high concentrations of growth factors, the APG[®] Platelet Concentrate can be used in multiple surgical procedures and clinical treatments.

APG[®] concentrate in dentistry

Several studies suggest that the use of a platelet concentrate, either alone or combined with other surgical techniques, or even as a support to implant devices, improves the success of operations, significantly increasing the patient's comfort and reducing healing time.

The APG[®] method is used for:

- _ Bone regeneration in tooth extraction sockets;
- _ Bone defect regeneration (periradicular surgery);
- _ Bone regeneration after cyst removal;
- _ Bone regeneration around implants, improving

Osseointegration;

- _ Sinus lifts;
- _ Surgical treatment of osteonecrosis;
- _ Accelerating the healing of surgical wounds;
- _ Decreasing inflammation and postoperative pain.

In all these treatments, the adhesive nature of APG[®] aids the handling of implant material, improving hemostasis and wound closure compared to the traditional technique.⁶

Furthermore, recent studies have shown that the use of platelet-rich plasma increases microvascular proliferation in the early stages of healing, followed by a better osteoblastic activity.

6. Parikh B, Navin S, Vaishali P. A comparative evaluation of healing with a computed tomography scan of bilateral periapical lesions treated with and without the use of platelet-rich plasma. Indian J Dent Res 2011;22:497-498.

APG[®] concentrate in cosmetic surgery

UVB exposure stimulates skin fibroblasts to produce collagenase and to degrade collagen. This process leads to changes in elastic tissue structure, reducing the structural integrity of the skin, which is the main cause of wrinkles and loss of skin elasticity.

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 cells to rejuvenate.

It has been shown that the use of APG[®] Concentrate during cosmetic laser treatments increased skin elasticity, the amount of collagen and the number of fibroblasts, demonstrating a better cosmetic result and faster wound healing.⁷

The APG[®] method is used for:

- _ Treating forehead wrinkles, wrinkles around the eyes, nasolabial wrinkles, wrinkles on the neck and décolletage;
- _ Treating acne scars;
- _ Toning the skin and reducing skin laxity;
- _ Treating stretch marks;
- _ Treating and re-epithelialising skin wounds and ulcers.⁸

7. Franco Forni, Massimo Marzagalli, Patrizia Tesei, Alessandra Grassi Platelet gel: applications in dental regenerative surgery Hospital Dentistry Service, Foundation I.R.C.C.S, San Matteo Hospital, Pavia, Italy.

8. Platelet-Rich Plasma (PRP) for Acute Muscle Injury: A Systematic Review Mohamad Shariff A. Hamid^{1*}, Ashril Yusof², Mohamed Razif Mohamed Ali³.

APG[®] concentrate in orthopedics

In recent years, clinical experience has shown that acute traumatic injuries to the muscles, tendons, and joint capsules significantly benefit from treatment with platelet growth factors, also in relation to the age of patients, the affected area of the body and its degree of functionality.

Young patients and athletes benefit from the use of platelet growth factors to reduce the time of functional damage with faster recovery.

More specifically, the application of APG[®] Concentrate has proved particularly effective in the treatment of acute and chronic injuries of tendons, osteoarthritis of the knee, and epicondylitis.⁴⁻⁶

4. Albanese et al. Immunity & Ageing 2013, 10:23 Platelet-rich plasma (PRP) in dental and oral surgery: from the wound healing to bone regeneration <http://www.immunityageing.com/content/10/1/23>.

5. Albanese et al. Immunity & Ageing 2013, 10:23 Platelet-rich plasma (PRP) in dental and oral surgery: from the wound healing to bone regeneration. <http://www.immunityageing.com/content/10/1/23>.

6. Parikh B, Navin S, Vaishali P. A comparative evaluation of healing with a computed tomography scan of bilateral periapical lesions treated with and without the use of platelet-rich plasma. Indian J Dent Res 2011;22:497-498.

APG[®] concentrate in trichology

It was recently found that treatments with Platelet Concentrate on the scalp of patients affected by alopecia areata or baldness result in increased hair growth and thickness, as well as an increased number of hair follicles and improved microcapillary angiogenesis.¹⁰⁻¹²

This treatment has no side effects; it is well tolerated and offers tangible results from the very first use and in a short time, both in terms of reduced hair loss and improved re-growth and thickening of the crown.

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10. Comparison of short-term results of intraarticular platelet-rich plasma (PRP) and hyaluronic acid treatments in early-stage gonarthrosis patients. Guler O., Mutlu S., Isyar M, Seker A., Kayaalp ME, Mahirogullari M.; Eur J ORthop Surg Traumatol. 2014 Aug 2.
 11. Dae Hun Kim, M.D., Young Jin Je, M.S., Chang Deok Kim, Ph.D., Young Ho Lee, M.D.1, Young Joon Seo, M.D., Jeung Hoon Lee, M.D., Young Lee, M.D. Can Platelet-rich Plasma Be Used for Skin Rejuvenation? Evaluation of Effects of Platelet-rich Plasma on Human Dermal Fibroblast Departments of Dermatology and 1Anatomy, College of Medicine, Chungnam National University, Daejeon, Korea.
 12. Platelet growth factors in treating wounds Use of platelet growth factors in treating wounds and soft-tissue injuries P. Ro'man and Z. Bolta.

GF-ONE® CENTRIFUGE



gfone®
The perfect correlation
among functionality, design, reliability.

GF-ONE® CENTRIFUGE

General purpose for applications with medical devices.

A counter-top device specifically designed for separating blood components. It is managed by a microprocessor which allows users to set speed and centrifugation time, with the ability to customise programmes.

GF-ONE® centrifuge options:

- _8-position steel strip rotor (10/15mL)
- _4-position steel strip rotor (10/15mL)
- _4-position steel strip rotor (30/50mL)
- _12-position steel strip rotor (2.5/5mL)
- _10/15 mL tube rack
- _30/50 mL tube rack
- _10 mL vial adapters

GF-ONE® KIT



These are choices in life
that can be done with closed eyes.

UBGEN
Group of companies

The story of regeneration is here.

GF-ONE® KIT01

Disposable kits for Platelet Gel preparation and application, including:

- _ 4 x 9 ml blue vials with anticoagulant
- _ 4 x 9 ml white vials for fractionation
- _ 2 x 9 ml red vials with serum activator
- _ 1 x 2,5 ml syringe
- _ 1 x 1 ml activator syringe
- _ 1 butterfly needle 21G for blood collection with a safety device for withdrawal.
- _ 1 needle 20G

GF-ONE® KIT02

Disposable kits for Platelet Gel preparation and application, including:

- _ 4 x 9 ml blue vials with anticoagulant
- _ 4 x 9 ml white vials for fractionation
- _ 1 x 2,5 ml syringe
- _ 1 x 1 ml activator syringe
- _ 1 butterfly needle 21G for blood collection with a safety device for withdrawal.
- _ 4 ultra fine needles 34G
- _ 1 needle 20G

BIBLIOGRAPHY

1. Arshdeep, Kumaran M S. Platelet-rich plasma in dermatology: Boon or a bane? *Indian J Dermatol Venereol Leprol* 2014;80:5- 14.
2. Ning Zhang, Yong-Ping Wu, Sheng-Jun Qian, Chong Teng, Shuai Chen, and Hang Li Research Progress in the Mechanism of Effect of PRP in Bone Deficiency Healing Hindawi Publishing Corporation The Scientific World Journal Volume 2013, Article ID 134582, 7 pages <http://dx.doi.org/10.1155/2013/134582>.
3. Department of Orthopaedics and Rehabilitation, University of Iowa <http://uiortho.com/index.php/prp.html>
4. Albanese et al. *Immunity & Ageing* 2013, 10:23 Platelet-rich plasma (PRP) in dental and oral surgery: from the wound healing to bone regeneration <http://www.immunityageing.com/content/10/1/23>.
5. Albanese et al. *Immunity & Ageing* 2013, 10:23 Platelet-rich plasma (PRP) in dental and oral surgery: from the wound healing to bone regeneration. <http://www.immunityageing.com/content/10/1/23>.
6. Parikh B, Navin S, Vaishali P. A comparative evaluation of healing with a computed tomography scan of bilateral periapical lesions treated with and without the use of platelet-rich plasma. *Indian J Dent Res* 2011;22:497-498.
7. Franco Forni, Massimo Marzagalli, Patrizia Tesei, Alessandra Grassi Platelet gel: applications in dental regenerative surgery Hospital Dentistry Service, Foundation I.R.C.C.S, San Matteo Hospital, Pavia, Italy.
8. Platelet-Rich Plasma (PRP) for Acute Muscle Injury: A Systematic Review Mohamad Shariff A. Hamid^{1*}, Ashril Yusof², Mohamed Razif Mohamed Ali³.
9. *Muscles Ligaments Tendons J.* 2013 Jul-Sep; 3(3): 139–149. PMID: PMC3838322 Published online Aug 11, 2013. Augmenting tendon and ligament repair with platelet-rich plasma (PRP) Ting Yuan,^{1,2} Chang-Qing Zhang,² and James H-C. Wang¹.
10. Comparison of short-term results of intraarticular platelet-rich plasma (PRP) and hyaluronic acid treatments in early-stage gonarthrosis patients. Guler O., Mutlu S., Isyar M, Seker A., Kayaalp ME, Mahirogullari M.; *Eur J ORthop Surg Traumatol.* 2014 Aug 2.
11. Dae Hun Kim, M.D., Young Jin Je, M.S., Chang Deok Kim, Ph.D., Young Ho Lee, M.D.¹, Young Joon Seo, M.D., Jeung Hoon Lee, M.D., Young Lee, M.D. Can Platelet-rich Plasma Be Used for Skin Rejuvenation? Evaluation of Effects of Platelet-rich Plasma on Human Dermal Fibroblast Departments of Dermatology and ¹Anatomy, College of Medicine, Chungnam National University, Daejeon, Korea.
12. Platelet growth factors in treating wounds Use of platelet growth factors in treating wounds and soft-tissue injuries P. Ro'man and Z. Bolta.
13. Shin MK¹, Lee JH, Lee SJ, Kim NI. Platelet-rich plasma combined with fractional laser therapy for skin rejuvenation. *Dermatol Surg.* 2012 Apr;38(4):623-30. doi: 10.1111/j.1524-4725.2011.02280.x. Epub 2012 Jan 30.

14. Indian Journal of Dermatology, Venereology and Leprology (IJDVL): Platelet rich plasma in dermatology: Boon or a bane? Arshdeep, M Sendhil Kumaran.
15. Application of platelet-rich plasma in plastic surgery: clinical and in vitro evaluation. *Tissue Eng Part C Methods*. 2009 Dec;15(4):625-34. doi: 10.1089/ten.TEC.2008.0518. Cervelli V, Gentile P, Scioli MG, Grimaldi M, Casciani CU, Spagnoli LG, Orlandi A.
16. Hindawi Publishing Corporation BioMed Research International
Volume 2014, Article ID 760709, 9 pages <http://dx.doi.org/10.1155/2014/760709> The Effect of Autologous Activated Platelet Rich Plasma (AA-PRP) Injection on Pattern Hair Loss: Clinical and Histomorphometric Evaluation
V. Cervelli,¹ S. Garcovich,² A. Bielli,³ G. Cervelli,⁴ B. C. Curcio,¹ M. G. Scioli,³ A. Orlandi,³ and P. Gentile^{1,51} Plastic and Reconstructive Surgery Department, University of Rome Tor Vergata.
17. Soft Tissue Augmentation with Autologous Platelet Gel and β -TCP: A Histologic and Histometric Study in Mice. Antonio Scarano, Maurizio Ceccarelli, Massimiliano Marchetti, Adriano Piattelli, and Carmen Mortellaro. *Biomed Res Int*. 2016; 2016: 2078104. Published online 2016 Jul 12. doi: 10.1155/2016/2078104
18. Soft Tissue Augmentation of the Face With Autologous Platelet-Derived Growth Factors and Tricalcium Phosphate. Microtomography Evaluation of Mice. Scarano, Antonio DDS, MD; Valbonetti, Luca DVM; Marchetti, Massimiliano MD; Lorusso, Felice DDS; Ceccarelli, Maurizio MD, PhD. *Journal of Craniofacial Surgery*: July 2016 - Volume 27 - Issue 5 - p 1212-1214 doi: 10.1097/SCS.0000000000002712

UBGEN: OUR PRODUCTS



RE-BONE®

A specific line of bone substitutes to promote the regeneration of tissues in bone and reconstructive surgery.

Available in versions:

- _ Block
- _ Cancellous and cortico-cancellous granules
- _ Syringe



SHELTER® membrane

A specific line of cell separators to promote the regeneration of tissues in bone and reconstructive surgery.

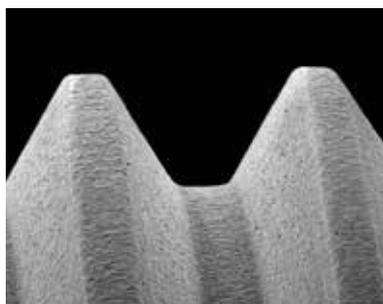
Available in versions:

- _ Slow absorption pericardium membrane
- _ Fast absorption pericardium membrane



Multipurpose GF-ONE® Centrifuge for applications with medical devices.

A counter-top device specifically designed for separating blood components. It is managed by a microprocessor which allows users to set speed and centrifugation time, with the ability to customise programmes.



ACTIGEN®

A new and exclusive collagen-based implant surface coating. A biological surface to promote osseointegration.



Bone & Tissue Management

Surgical instruments and PTFE sutures to support the most advanced oral surgery techniques.



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