PRGF®-Endoret®
PLASMA RICH IN GROWTH FACTORS
APPLICATION IN ORAL SURGERY
PLASMA RICH IN GROWTH FACTORS

It is based on obtaining a preparation of proteins based on the patient’s own blood; these proteins have biological activity, among which are the growth factors to stimulate and speed up tissue regeneration.

How does PRGF®-Endoret® technology?

TISSUE REGENERATION

When we suffer an injury, the human body releases proteins (cellular signals) to stimulate the process of repairing that injury.

With PRGF®-Endoret® technology we manage to isolate from the patient’s blood the plasma that contains these proteins that speed up regeneration. Once a therapeutic dose is applied to the treatment area, the regeneration process of wounds is considerably accelerated.

To carry out this process, it is necessary to draw a small amount of blood from the patient. This plasma is centrifuged and processed to obtain the proteins essential for regeneration. These proteins are applied to the area where tissue regeneration is necessary.
How can PRGF®-Endoret® technology help you?

PRGF®-Endoret® speeds up the tissue healing and regeneration process and reduces both inflammation and the risk of infection or post surgical complications. The use of PRGF®-Endoret® guarantees a noticeable improvement, absence of pain and quicker recovery.

One of the features that sets PRGF®-Endoret® technology apart from other platelet-rich plasmas (PRPs) is its versatility. It is possible to obtain, with the patient’s own blood, up to 4 different formulations with therapeutic potential depending on the level of coagulation and activation of the samples.

Filtered liquid (collyrium)
This filtered liquid compound can be used to cultivate cells in the laboratory, including stem cells, or in fields such as ophthalmology.

Liquid
Liquid compound to wet implant or prosthesis surfaces, infiltrations in traumatology or dermatology.

Clot
The clot is a perfect framework for cells. It can be used to fill in defects and to form autologous and heterologous grafts.

Fibrin membrane
Elastic fibrin membrane, dense and hemostatic embedded with growth factors. It is one of the best biomaterials for regenerative medicine.
PRGF®-Endoret® TECHNOLOGY

A pioneering product developed exclusively by BTI Biotechnology Institute

Pioneering
PRGF®-Endoret® technology is the pioneer (Patent no EP1066838) in the development of specific protocols for tissue regeneration.

Supported by over 70 scientific publications
With PRGF®-Endoret® as the PRP backed by the largest number of scientific publications.

The only one with CE and FDA health Certifications
PRGF®-Endoret® technology is the only technique that holds the health certifications for each one of the following applications:

- Healing of venous ulcers.
- Consolidation of bone fractures and grafts.
- Fixation of protheses (hip, knee, etc).
- Dental implant system.
- Injuries to the locomotor system (muscles, tendons, ligaments, joints).
- Treatment of skin burns, injuries and lesions.
- Skin rejuvenation.
- Regeneration of corneal lesions.

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FEATURES

Versatility
PRGF®-Endoret® technology is a versatile system that makes it possible to create up to 4 different therapeutic formulations that adapt to the characteristics of each application.

Small volumes of blood
The volume of blood used in PRGF®-Endoret® technology is variable (from 9 ml) and adequate for each application, and is very efficient for obtaining its formulations. Other systems use large volumes of blood.

Just one centrifugation
PRGF®-Endoret® technology uses a simple protocol with a single centrifugation. Other technologies use a number of centrifugations that could cause premature platelet activation and even adverse effects.

Therapeutic dose
PRGF®-Endoret® technology uses concentrations of growth factors within the therapeutic window for the stimulation of tissue regeneration as has been demonstrated in in-vitro research, in animals or in clinical trials. Other products use concentrations outside this window, obtaining unpredictable results.

100% Autologous
PRGF®-Endoret® is the market’s first 100% autologous technology.

Without proinflammatory effects
In addition, PRGF®-Endoret® technology allows the non-inclusion of leucocytes in its formulation, thus avoiding their proinflammatory effects, as has already been demonstrated in numerous scientific publications. In fact, its protein content has an anti-inflammatory effect once applied to the tissue.

Without undesirable effects
In none of the treatments carried out during 15 years have any undesired effects been observed.
ADVANTAGES OF PRGF®-Endoret®

- Pioneering technology with the most extensive experience in the market.

- 100% biocompatible, versatile and safe.

- Control over its activation and use.

- Simple and fast protocol. Only one centrifugation: just 8 minutes of centrifugation and 20 minutes of preparation.

- Great clinical efficiency in the stimulation of tissue healing and regeneration, as has been described in a large number of international articles.

- Does not contain leucocytes, avoiding their proinflammatory activity. Powerful bacteriostatic properties, as well as reducing pain.

- PRGF®-Endoret® technology is the only one that holds European (CE mark) and American (FDA Approval) health certifications, both for the different applications of the product and for each and every one of the elements necessary for their application (health products).

- Great versatility: multiple formulations and a large number of therapeutic applications.
Maximum **SAFETY**

In order to offer its patients the highest level of safety in its clinical practices, BTI’s products are **made with materials that are biocompatible with the plasma** which guarantee the absence of harmful effects in the short, medium and long term in the patient’s organism.

Other products, apparently similar, are made exclusively for research purposes (destined to the laboratory) for clinical use. Therefore, their harmlessness has not been guaranteed. (e.g.: contamination of the plasma through interaction with tubes of inadequate materials, use of laboratory centrifuges, use of activators not approved by legislation, etc.).

**Better TRAINING**

You will have the best technical support and the knowledge of the world’s top specialists in regeneration with growth factors.

**BTI® Technology**

**Beware of imitations!**

**PRGF®-Endoret®** is the growth factor technology with the most extensive experience and the best results in the market.

**BTI® Certifications**

All the components of **PRGF®-Endoret® Technology** have received the CE certification from the European health authorities and therefore **PRGF System®** is authorised in Europe and America to obtain plasma growth factors and its application in a number of medical specialities.

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**List of PUBLICATIONS**

**PRGF®-Endoret®**


ORAL SURGERY

This technology developed by Dr Eduardo Anitua over 15 years ago was initially applied in the field of oral surgery, and is still considered a scientific reference today.

The use of PRGF®-Endoret® in this field of medicine offers many clinical advantages in daily practice with its use for the treatment of post-extraction defects, regeneration around implants, intraosseous defects, sinus elevation, crestal expansion, vertical growth, treatment of periodontal defects. The results show the biosafety, effectiveness and predictability of PRGF®-Endoret® technology in oral surgery and oral implantology.

PRGF®-Endoret® technology can be used in daily clinical practice in:
- Post-extraction areas
- Regeneration around implants
- Intraosseous defects
- Sinus elevations
- Crestal expansion
- Vertical growth
- Treatment of periodontal defects

EXAMPLE OF ITS USE:

<table>
<thead>
<tr>
<th>Liquid</th>
<th>Humectation</th>
<th>Bone graft</th>
<th>Fibrin Membrane</th>
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<tbody>
<tr>
<td>Irrigation of the area to be treated with the liquid formulation of PRGF®-Endoret® prior to the insertion of the implant.</td>
<td>The humectation of dental implant systems with PRGF®-Endoret® creates a biologically active nano-membrane that stimulates the migration, proliferation and differentiation of osteoprogenitor cells and their adhesion to the titanium surface.</td>
<td>The patient’s own bone collected during the milling along with the PRGF®-Endoret® clot form the autologous graft that allows us to improve osseointegration and fill in bone defects.</td>
<td>The sealing of the fibrin membrane with a powerful anti-inflammatory and bacteriostatic effect will make it easier to obtain good treatment results.</td>
</tr>
</tbody>
</table>
Healing of Wounds

It has been proven that the use of the different formulations of PRGF®-Endoret® technology speeds up the regeneration and healing of wounds produced during surgery.

Quick Vascularisation

Dental Extractions

The local release of proteins and growth factors in the defect encourage the quick vascularisation of the area and bone regeneration. Elastic fibrin stimulates the fast epithelisation of adjacent soft tissues and avoids the use of flaps and grafts.

Osseointegration

Soft Tissues

The set of growth factors released by PRGF®-Endoret® stimulates epithelial regeneration. The sealing of grafts with autologous fibrin minimises the possibilities of contamination of the graft and favours faster epithelisation.

Implant

The humectation of the implant surfaces with PRGF®-Endoret® creates a much more favourable biological environment for osseointegration, as a protein interface is achieved that favours cell migration over the new fibrin bridges created between the osseous wall and the implant surface.

Simplicity

Preparation and Manipulation

The preparation protocol is simple and fast. The humectant and binding properties of PRGF®-Endoret® facilitate the handling, manipulation and stabilisation of different biomaterials and bone grafts.

Predictability

Dental Implant System

The use of PRGF®-Endoret® significantly increases the success rate in treatments with dental implant system. In addition, it reduces the periods between different surgery stages.

List of Publications

PRGF®-Endoret® technology and all its component elements have been specifically designed by the department of R&D&I at Biotechnology Institute (BTI) to obtain Plasma Rich in Growth Factors (PRGF®-Endoret®) for its subsequent application to different specialities.

PRGF®-Endoret® technology has been conceived thanks to a series of precise and very rigorous protocols during each stage (extraction, centrifuging, fractioning, activation and application) which guarantees the predictability of the quality of the final product obtained.

PRGF®-Endoret® technology is being satisfactorily used in a number of countries spread over the 5 continents.
This new single-use plasma fractionation kit has all the necessary elements for the PRGF®-Endoret® technique in oral and maxillofacial surgery.

**KIT PTD-CO9 FOR 20 USES WITH 9 ML TUBES:**
- 20 Plasma Transfer Device
- 150 TE9 tubes
- 100 TF9 tubes
- 20 PRGF-ACT blisters
- 20 activation syringes.
COMPONENTS

TECHNIQUE

PRGF®-Endoret®

SYSTEM IV CENTRIFUGE
- Specific equipment designed and approved by the health authorities for the preparation of PRGF®-Endoret®, unlike laboratory centrifuges.
- Removable and sterilisable tube holder with capacity for 8 tubes of 5 or 9 ml.
- Dimensions: width: 36 cm. / height: 27 cm. (closed), 36 cm. (open) / depth: 43 cm.
- Weight: 15.4 kg.

SYSTeM IV CeNTRIFuGe
- Specially designed to maintain asepsis of the plasma throughout the process.
- It has nine lateral windows that facilitate viewing the volume.
- With a protective cover to maintain asepsis during transport from one room to another.
- Capacity for 8 tubes of 9 ml.

RACKS
- Facilitates and speeds up the obtaining of different formations (clots, grafts, fibrin membranes).
- Maintains a constant temperature of 37ºC +/-1.
- Capacity for different recipient sizes (racks, dishes,...).
- Sterilisable removable trays.
- Dimensions: width: 30 cm. / height: 18 cm. / depth: 23 cm.
- Weight: 3,645 kg.

PLASMATHERM H®
- To carry out the activation phase.
- Made with a biocompatible material.
- With a protective cover to guarantee the aseptic conditions of PRGF®-Endoret®.
- Available in 3 sizes (40, 50 and 60 ml). Autoclavable.

ACTIVATION RECIPIENTS
- Facilitates and speeds up the obtaining of different formations (clots, grafts, fibrin membranes).
- Maintains a constant temperature of 37ºC +/-1.
- Capacity for different recipient sizes (racks, dishes,...).
- Sterilisable removable trays.
- Dimensions: width: 30 cm. / height: 18 cm. / depth: 23 cm.
- Weight: 3,645 kg.
SINGLE-USE MATERIAL

**BTI PROTOCOL**

**PLASMA TRANSFER DEVICE**
- Aspiration and fractionation system
- PRGF®-Endoret® single-use and disposable.
- Individually blistered and sterilised units.
- Does not need calibration or maintenance.
- Ergonomic: light and easy to use.

**PRGF ACTIVATOR**
- 1 ml blister of calcium chloride.
- Sterile, individually blistered.
- Indicated for the activation of PRGF®-Endoret®, in a biologically controlled way.

![PRGF Activator Image]

**EXTRACTION TUBES**
- Capacity: 9 ml.
- With an anticoagulant that does not activate the platelets nonspecifically.
- Sterile inside.
- Tubes approved for the preparation of PRGF®-Endoret® (Health product).

**FRACTIONATION TUBES**
- Capacity: 9 ml.
- Sterile inside.
- Tubes approved for the preparation of PRGF®-Endoret® (Health product).

![Fractionation Tubes Image]

**ACTIVATING SYRINGE**
- Syringe for activation of PRGF®-Endoret® in a controlled manner.
- 0.5 ml capacity.
- Sterile, individually blistered and disposable.

**VENOJET VACUTAINER**
- Blood extraction butterfly needles.
- Sterile, individually blistered.
- Closed system for blood extraction.
Dr. Maurice Salama (USA)

“Since starting to incorporate Dr. Anitua’s PRGF®-Endoret® protocol to my clinical regenerative cases over 6 years ago my results have been exceptional. It has assisted me in both tissue and bone regeneration with minimal post-op complications and higher success rates.”

Dr. Babak Saidi (GER)

“PRGF®-Endoret® revolutionised my pre-operation protocol for implant patients. Not only does it improve the alveolus and the soft tissue, it also makes it easier to create grafts to be used for example for a sinus elevation or for lateral bone augmentation. Even the patients’ reaction towards the use of autologous growth factors is positive, since we avoid the use of exogenous materials. It is simple and efficient to prepare PRGF and it is a means of differentiation from other implantologists of our region.”

Dr. Michael Pikos (USA)

“The use of autologous platelet secreted growth factors (PRGF) in my practice for the past 9 years has allowed me to take advantage of the outstanding accelerated wound healing characteristics of this impressive biotechnology with regard to my bone and soft tissue grafting procedures. I continue to be impressed with this incredible technology and encourage its use by all of my colleagues.”

Dr. Hiroyasu Tsukahara (JAPAN)

“PRGF®-Endoret® has given me a big advantage for past 5 years in all my surgery, not only for implant surgery but also for other treatments such as periodontal disease. It accelerates wound healing and regenerative process of bone and soft tissue without any side effect. I would also add as my opinion this simple protocol is remarkable advantage in field of the practice.”

All the information at www.bti-biotechnologyinstitute.com

You can find all the information you need at www.bti-implant.com. We hope that it can become your website of reference, where in addition to providing content that is updated on a daily basis, it can be used as a tool to encourage two-way communication. Discover the BTI web experience.
Biennial
INTERNATIONAL SYMPOSIUM
ON TRANSLATIONAL
REGENERATIVE MEDICINE

A biennial event of a particularly translational nature that focuses its content on the application of new regenerative therapies to certain pathologies or to specific groups of patients, transferring the knowledge acquired in the laboratory to clinical applications.

This symposium focuses on dealing with current issues with a high level of thoroughness and interest from both a sanitary and a social point of view, including an excellent lineup of lecturers.

BTI training
PRGF®-Endoret® TECHNOLOGY

The work carried out in training, in addition to that carried out in the field of research, guarantee the effectiveness and biosafety of PRGF®-Endoret® Technology and allows its application for a large number of pathologies and functional alterations in very diverse fields of medicine such as oral implantology, skin regeneration, sports medicine, traumatology, degenerative diseases such as osteoarthritis and ophthalmology, among others.

It is of vital importance that the professionals that will apply this technology are adequately trained as it is a treatment that requires adequate installations, very strict protocols and qualified staff.

For this reason, BTI has an excellent team that gives this training, integrated by professionals with extensive clinical and teaching experience and which are part of a multidisciplinary group, in addition to being pioneers in its development and holding the patent of the procedure.

BTI TRAINING COURSES
BIOTECHNOLOGY INSTITUTE

SCAN THIS CODE
with your mobile phone
and you can access all the training courses related to PRGF®-Endoret®.