BTI Biotechnology Institute is a Spanish biomedicine company focused on the development of translational research projects (R&D+i).

BTI is a world-level scientific leader in regenerative medicine using Endoret in different fields of medicine.

MORE THAN 5000 M² DEVOTED TO TRAINING, CLINICAL PRACTICE AND RESEARCH
WE TRAIN IN ORDER TO OPTIMISE THE CLINICAL RESULTS

- Specific training aimed at different medical specialities.
- More than 40 scientific collaboration agreements with universities and research institutes all over the world.
- More than 1200 students per year of all nationalities.

TRANSLATIONAL RESEARCH: KNOWLEDGE ACQUIRED IN THE LABORATORY APPLIED TO CLINICAL PRACTICE

- Collaboration with experts from different countries in different fields of medicine for the development of clinically effective protocols.

MORE THAN 150 INDEXED SCIENTIFIC PUBLICATIONS BACK THE EFFECTIVENESS AND BIOSAFETY OF ENDORET®

- 20% of the workforce dedicated to research.
- More than 15 years of research in tissue regeneration.

ENDORET® TECHNOLOGY

1. WHAT IS IT?

ENDORET® IS A BIOMEDICAL TECHNOLOGY AIMED AT STIMULATING TISSUE REGENERATION BY APPLYING AUTOLOGOUS PROTEINS.

Hundreds of endogenous proteins affect the tissue repair processes, including angiogenesis, chemotaxis and cell proliferation. No exogenic agent can effectively govern all these processes.\(^1\)

Endoret technology provides the necessary means for obtaining plasma rich in growth factors from whole blood.
2. PROTEINS AND AUTOLOGOUS MATRIX

A. GROWTH FACTORS

**ENDORET** stimulates tissue regeneration due to enrichment with growth factors, acting as a biological system. (2)

![Quantification of the Increase in VEGF (Vascular Endothelial Growth Factor) and PDGF (Platelet Derived Growth Factor)]

B. FIBRIN MEMBRANE

Enables the balanced and gradual release of a large number of molecules, including growth factors and other proteins. (3) (4) (5)
3. REGENERATIVE POTENTIAL

- Promoting angiogenesis (A). \(^6\)
- Stimulating cell migration (B). \(^7\)
- Increasing the proliferation (B). \(^7\)(8)(9)
- Decreasing inflammation and pain (C). \(^10\)(11)(12)
- Stimulating autocrine and paracrine secretion of growth factors (B). \(^7\)(8)(9)

(A) Pre-clinical study  (B) In vitro study  (C) Clinical study

ENDORET ACCELERATES CELL MIGRATION FOR REGENERATIVE PURPOSES \(^7\)(8)

ENDORET® TECHNOLOGY REDUCES THE TISSUE REPAIR TIME IN CLINICAL TRIALS. \(^13\)(14)

ENDORET TECHNOLOGY ORAL SURGERY

INITIAL STATUS (0H.)  CONTROL (24H.)  ENDORET® (24H.)

RESPONSE OF THE TISSUE

- HEMOSTASIS
- INFLAMMATION
- PROLIFERATION
- REMODELING

SCAN THE CODE WITH YOUR SMARTPHONE TO WATCH THIS VIDEO
4. VERSATILITY

The versatility of the Endoret technology allows for its use in different clinical applications.\(^{(15)}\)

5. SAFETY

Autologous product, there are no incompatibilities nor risk of rejection.

All the formulations of ENDORET have a bacteriostatic effect, especially during the 4 hours after application (in vitro studies).\(^{(16)}\)\(^{(17)}\)\(^{(18)}\)

More than 700,000 patients have been treated in more than 20 countries, without any adverse effects being reported.
1. INCREASED PREDICTABILITY

BTI IMPLANTS WETTED WITH ENDORET HAVE A HIGH SURVIVAL RATE (19)(20)(21)(22)

When the surface of the implants is wetted with ENDORET liquid, a fibrin membrane is formed and adheres to the surface of the implant, releasing growth factors and improving the osseointegration.

The nano-rough surface of BTI implants is specially designed to boost the biological effects of ENDORET.

WETTING WITH ENDORET INCREASED THE TRABECULAR THICKNESS AND MATURITY OF THE BONE

SURVIVAL RATES REPORTED IN CLINICAL STUDIES:

- Up to 5 years follow-up study 5787 implants. 99.2% (19)
- Up to 5 years follow-up study 1139 immediate load implants. 99.3% (17)
- Up to 8 years follow-up study 1287 short implants. 99.3% (18)
- 10-12 years follow-up study 111 short implants. 98.9% (22)

HISTOMORPHOMETRIC EVALUATION OF THE BONE-IMPLANT CONTACT SURFACE (BIC) AFTER TWO MONTHS IN GOATS (23)

* p<0.05
The application of Endoret® in the treatment of post-extraction socket reduces inflammation and pain, accelerates soft tissues healing and promotes bone regeneration as it has been demonstrated in several clinical trials. \(^{11}^{14}^{24}\)

The survival rate of immediately placed dental implant, after tooth extraction, has been 98% in a clinical study. It is a safe, effective and predictable treatment. \(^{25}\)
3. REDUCED RISK OF OSTEONECROSIS

The results of various clinical studies suggest that treatment with ENDORET can reduce the risk of BRONJ after a dental extraction in high-risk patients under treatment with bisphosphonates.\(^{(27)(28)}\)

<table>
<thead>
<tr>
<th>TREATMENT</th>
<th>NUMBER OF EXTRACTIONS</th>
<th>OSTEONECROSIS OF THE MAXILLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>267</td>
<td>5</td>
</tr>
<tr>
<td>Endoret(^{®}) (PRGF(^{®}))</td>
<td>542</td>
<td>0</td>
</tr>
</tbody>
</table>

CLINICAL TRIAL OF THE PREVENTION OF BISPHOSPHONATE-ASSOCIATED OSTEONECROSIS OF THE JAW (BRONJ) \(^{(27)}\)
4. ENDORET® IN THE TREATMENT OF BRONJ

Treatment with ENDORET, after resecting the necrotic bone of BRONJ, may enhance vascularization and regeneration of bone and epithelial tissue as shown in a clinical trial. (28)

Endoret was effective in the surgical treatment of bisphosphonate-associated osteonecrosis of the jaw, achieving closure of the defect in 32 patients in a clinical prospective study. (29)

Endoret restored the function of the inferior dental nerve affected by the BRONJ lesion in one patient. (29)

5. PREPARATION OF GRAFTS

ENDORET can be used to agglutinate a biomaterial, making it easier to handle and improving its osteoconductive and biological properties. (10)(30)(31)(32)(33)

6. TREATMENT OF ATROPHIC MAXILLAE

ENDORET improves the tissue regeneration and due to its versatility can be used in various surgical techniques.
### A. LATERAL BONE AUGMENTATION

The alveolar ridge expansion and the alveolar ridge split techniques in combination with ENDORET can achieve an average bone expansion of 3.35 mm.\(^{(34)(35)}\)

The use of ENDORET in combination with the block graft improves the tissue healing, avoiding the exposure of the graft and improves the post-operative recovery of the patient.\(^{(36)}\)

### DISTRIBUTION OF WIDTH VALUES (MM) OF THE INITIAL AND FINAL CRESTS.

![Graph showing distribution of initial and final ridge widths.](image)

The use of ENDORET in combination with the block graft improves the tissue healing, avoiding the exposure of the graft and improves the post-operative recovery of the patient.\(^{(36)}\)

### TWO-STAGE CRESTAL SPLIT TREATMENT

![Images of surgical procedures.](image)

A) Longitudinal corticotomy with ultrasound tip.  
b) Use of bone grafts and fibrin membranes  
c) After 3 months  
d) After 6 months
B. SINUS ELEVATION

ENDORET reduces inflammation and pain. It increases the new bone formation.\(^{(10)(32)(37)}\)

ENDORET is effective in the treatment of perforations in the Schneider membrane. \(^{(31)}\)
C. VERTICAL BONE REGENERATION

The combination of Endoret graft with short and extra-short implants makes possible the rehabilitation of atrophic mandible without the need of more aggressive techniques. \(^{(38)(39)}\)

7. PERIODONTAL REGENERATION

ENDORET may be beneficial in the field of the mucogingival surgery.\(^{(40)}\)

Treatment of gingival defects
COMPONENTS OF ENDORET TECHNOLOGY®

1. ENDORET® DISPENSABLE KIT
SINGLE-USE KIT*

* MEDICAL DEVICES CERTIFIED FOR APPLICATION IN THE REGENERATION OF SOFT AND HARD TISSUES FOR ORAL SURGERY.

KIT KMU15
- 4 extraction tubes
- 2 fractioning tubes
- 1 ampoule of activator
- 1 activation syringe
- 1 PTD 2
- 1 winged blood collection set
- 5 identification labels

IN EACH KMU15, ONE BLISTER PACK OF ADDITIONAL MATERIAL WITH:
- 8 extraction tubes
- 4 fractioning tubes
- 2 ampoules of activator

KIT KMU15 PLUS
- 8 extraction tubes
- 4 fractioning tubes
- 2 ampoules of activator
- 1 activation syringe
- 1 PTD 2
- 1 winged blood collection set
- 5 identification labels

10 BLISTER PACKS FOR INDIVIDUAL TREATMENTS
2. EQUIPMENT

- Centrifuge System V
- Plasmaterm H

START PTD0 KIT

- Work rack
- Activation containers (ø50 mm).
- Digital timer unit.
- KMU15 Kit

3. TRAINING

Exclusive training adapted to medical needs. We share our new clinical research and provide training for innovative, top-quality healthcare.

4. CERTIFICATION

We certify the clinical qualification and experience of our customers with our training certificates.
ADVANTAGES OF ENDORET TECHNOLOGY®

ENDORET is the technology with the most experience on the market in the development of specific protocols for tissue regeneration, a pioneering technology manufactured exclusively by BTI Biotechnology Institute.

OPTIMUM CONCENTRATION OF PLATELETS
The right concentration of platelets affects the final efficacy. (2) (41)

FORMULATION FREE OF LEUKOCYTES
The inclusion of leukocytes increases the pain and inflammation (43) and accelerates the deterioration of the fibrin. (43)

CONTROLLED ACTIVATION
Enables the formation of the fibrin matrix in situ and the gradual release of growth factors, maintaining its efficacy over time. (4) (44)

AUTOLOGOUS
It is made from the patient’s own blood, so there are no known adverse effects. (45)

REPRODUCIBLE
The protocol for the preparation process and its clinical application is strictly defined and tested.

VERSATILE
4 preparations that can adapt the product to the clinical needs. (15)(46)
SAFETY AND REGULATORY ASSURANCE

QUALITY ASSURANCE

· The ENDORET system complies with the highest standards of quality. The protocol for the preparation of ENDORET is described in detail in the Manual for Use contained in each ENDORET PRGF Kit.

· Both the system and the materials have the CE health certificate for specific application to oral surgery.

GUARANTEES OF EFFICACY

· BTI has the greatest clinical support in the world published in this field; its effectiveness is proven in more than 150 international scientific publications.

ADDITIONAL GUARANTEES

· BTI certifies its customers’ specific training in the use of this technology.

· In addition, BTI guarantees the traceability of its materials, and helps transfer all necessary information to its patients.


Tooth extraction in patients on zoledronic acid therapy. Oral Oncol. 2012 Sep;48(9):817-21


Plasma rich in growth factors (PRGF-Endoret) associated with connective tissue grafts in the treatment of gingival recessions. Europerio 7, June 6-12, 2012, Vienna, Austria.


