What is UnicCa®?

UnicCa® is a new surface treatment for BTI implants that consists of the chemical modification of the optima® surface with calcium ions.

Remember that...

The optima® surface of BTI implants consists of a triple roughness depending on the area of the implant: neck, crests or roots, thus adapting to the different tissues and the biomechanical needs to achieve better osseointegration and to minimise the risks of peri-implantitis.
WHAT ARE THE RESULTS OF THE UNICCA SURFACE?

unicCa® = optima® + Ca

In addition to the excellent results of the optima® surface, the modification with calcium ions provides:

1. AN ELECTROPOTITIVE, CLEAN AND ACTIVE SURFACE IN A NEW CONTAINER THAT MAINTAINS ITS SUPERHYDROPHILIC PROPERTIES -> consequence: The surface immediately interacts with the growth factors [5,13,14].

2. PROCOAGULANT SURFACE -> consequence: Fills the surface-implant gap. Instant stability [5-7].

3. ADHESIVE AND PLATELET-ACTIVATING SURFACE -> consequence: The surface becomes a growth factor emitter which reduces the regeneration times. [6-8].
4. ANTIBACTERIAL STATIC SURFACE: REDUCES THE FORMATION OF MICROBIAL BIOFILMS -> consequence: significant reduction of the risk of peri-implantitis. The additional use of Endoret® (PRGF®) increases and extends this effect.

![Graph showing bacterial adhesion in real conditions](image)

* Surfaces subjected to bacterial cultures under a flow of natural saliva from healthy donors during 24h. The different letters show statistically significant differences p<0.05 between the groups (ANOVA).

5. OSTEOGENIC SURFACE: INDUCES THE FORMATION OF BONE TISSUE

-> consequence: Accelerates and improves osseointegration. Combined use with Endoret® (PRGF®) enables the osseointegration to be already significantly higher after 2 weeks of the implantation. [6,15]

![Graph showing BIC (%)](image)

The different letters show statistically significant differences p<0.05 between the groups (ANOVA).
WHY CALCIUM?

Calcium is a bioinorganic ion with decisive functions during all bone regeneration processes. [1–3].

HOW DOES THE UNICCA SURFACE ACT?

The calcium ions are released in two phases.

The first phase takes place at the moment of implantation and lasts for a few minutes: coagulation on the implant surface, platelet adhesion, activation and release of growth factors [4–6]. The formation of the matrix in the implant-bone gap achieves instant stability of the implant [7–10].

In the second phase, the release lasts for several months and maintains a concentration of calcium that is fundamental for osseointegration [6,11,12].
Note: consult your distributor for the availability of the product in the different markets.

www.bti-biotechnologyinstitute.com

COVER IMAGE: Electron microscopy of the optima® surface of a BTI implant: the bone (marked in light red) fills in the porosity and increases the initial stability and osseointegration of the implant. Image width 150 µm.