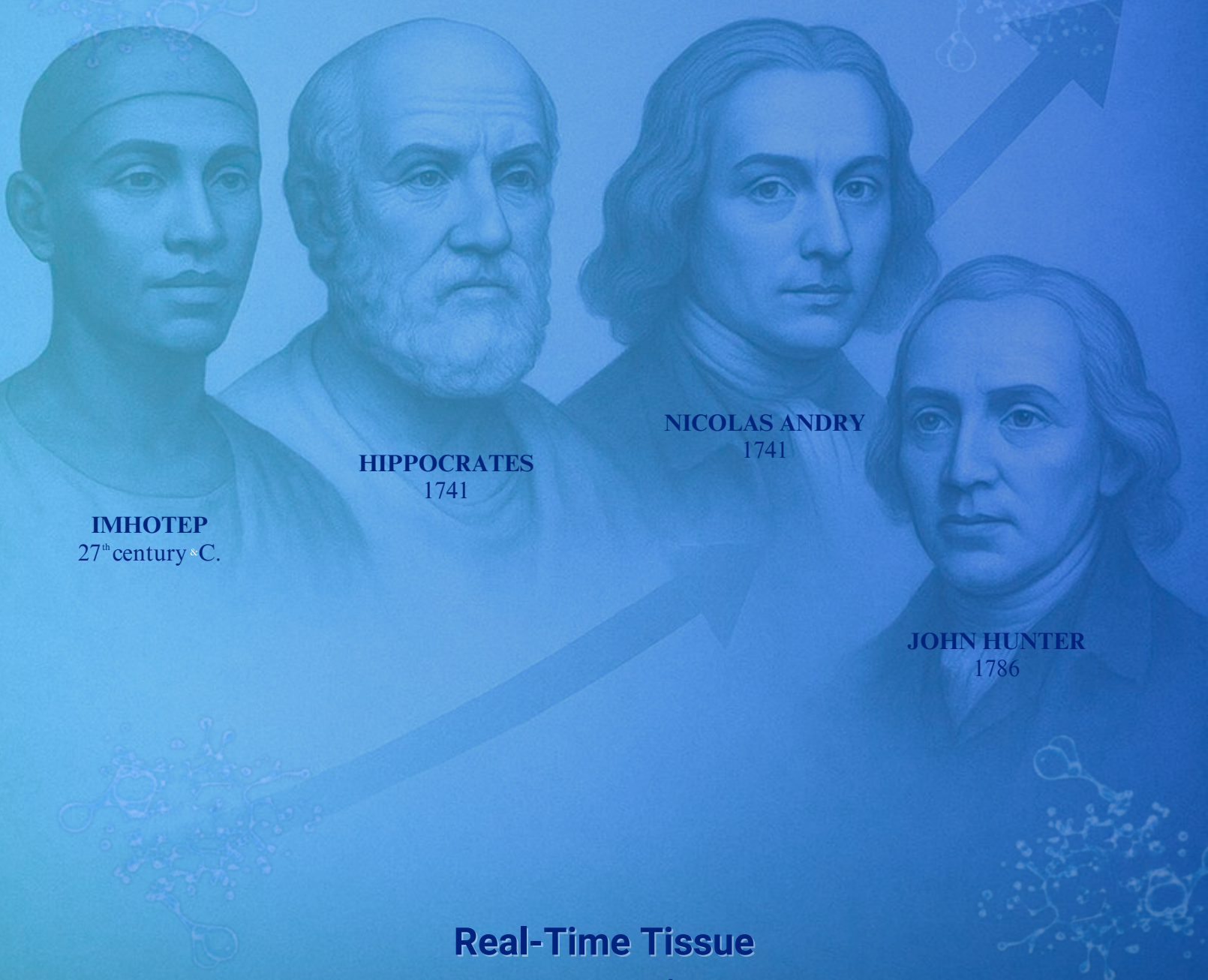


ARTIFICIAL TISSUE TECHNOLOGY

We DESIGN NOT ONLY BONE, BUT ALSO THE
FUTURE



IMHOTEP
27th century & C.

HIPPOCRATES
1741

NICOLAS ANDRY
1741

JOHN HUNTER
1786

**Real-Time Tissue
Regeneration**

bloocell[®]
the language of technology

A NEW ERA IN TISSUE ENGINEERING

BLOOCELL®: A NEW ERA IN TISSUE ENGINEERING

Bloocell® is the world's first "ARTIFICIAL TISSUE TECHNOLOGY" developed in the field of tissue engineering for the treatment of tissue deficiencies.

It is a complementary and therapeutic solution that can be manufactured in patient-specific anatomical forms.

With its innovative technology, Bloocell® has become the first legal representative of this paradigm worldwide. Clinical results have been consistently successful.

Bloocell® is a three-dimensional scaffold designed for the treatment of damaged or missing tissues.

It offers a holistic therapeutic approach by supporting cell growth, tissue formation, and the healing process.

While reinforcing the tissue structure, Bloocell® also facilitates cell proliferation and differentiation in an optimized environment.

Made from biologically compatible materials, Bloocell® does not induce adverse immune responses once integrated into the body.

As a bioresorbable scaffold, Bloocell® is gradually absorbed and replaced by new tissue. This process provides an ideal environment for natural tissue regeneration and repair.

Bloocell® can reconstruct various tissue types such as bone, cartilage, soft tissue, skin, and nerves.

Therefore, Bloocell® offers a broader application range than grafts and carries lower associated risks.

The Bloocell® technology has been successfully industrialized and patented as a result of laboratory and preclinical studies conducted by scientists worldwide.

After obtaining all necessary regulatory approvals, it was transformed into a market-ready product.

Based on these laboratory and preclinical studies, the effects of Bloocell® on cells, its biocompatibility, mechanical durability, degree of mineralization, and angiogenic factors were thoroughly examined. Comprehensive evaluations of the final products were also completed successfully.

The positive clinical outcomes of Bloocell® were presented at the scientific congresses of the European Association for Osseointegration (EAO) and the German Society for Implantology (DGI), two of the leading authorities in the field.

(3-dimensional evaluation of E-polycaprolactone containing membrane's efficacy in guided bone regeneration: A retrospective study)

Özdemir, E., Familiari, F., Huri, P. Y., Firat, A., & Huri, G. (2023). Use of 3D-printed polycaprolactone+ hyaluronic acid-based scaffold in orthopedic practice: report of two cases. *Journal of 3D Printing in Medicine*, 7(1), 3DP001.

Dogan, S. E., Ozturk, C., & Koc, B. (2025). Design of patient-specific mandibular reconstruction plates and a hybrid scaffold. *Computers in Biology and Medicine*, Elsevier 184, 109380.

Bloocell® Bioscaffold represents a significant paradigm shift from conventional “standard bone graft” treatments to advanced tissue engineering.

The product is used to provide sufficient load-bearing support during bone regeneration, mimic the mechanical structure of natural tissue, and promote tissue renewal.

Bloocell® Bioscaffold is a three-layered scaffold designed for the repair and regeneration of degenerative and post-traumatic bone and cartilage defects.

It consists of PCL (Polycaprolactone), HA (Hyaluronic Acid), and β -TCP (Beta-Tricalcium Phosphate).

Bloocell® Bioscaffold contains no animal-derived (xenograft) or human-derived (allograft) tissue components.

Studies investigating the effect of the mechanical structure of Bloocell® Bioscaffold on cell behavior have shown high cell proliferation, adhesion, and spreading on the scaffold surface.

Thanks to its ability to control the architecture and strength of bone tissue, Bloocell® Bioscaffold plays a critical role in achieving harmony between the scaffold and the host tissue, effectively meeting this essential need.



Mechanical Properties and Test Results

Bloocell® Bioscaffold artificial tissue technology is a specially engineered polymer-based scaffold that provides high biocompatibility and controlled biodegradability.

The product is optimized to deliver the necessary load-bearing support during bone regeneration in its areas of application.

The mechanical strength of Bloocell® Bioscaffold was evaluated through uniaxial static compression tests conducted in an accredited, independent laboratory, referencing ISO 5833 and ASTM D695 standards.

These standards define widely accepted methods for assessing mechanical performance of biomaterials and implants under compressive forces.



Figure 1. Schematic Diagram of the Test Setup

Static Compression Test Results

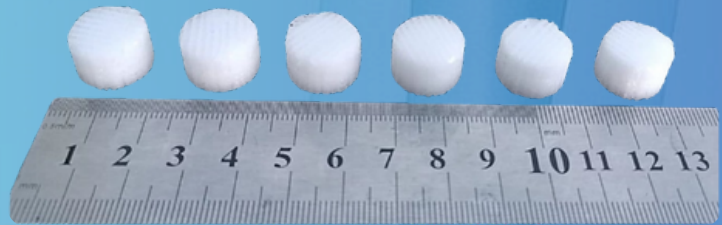
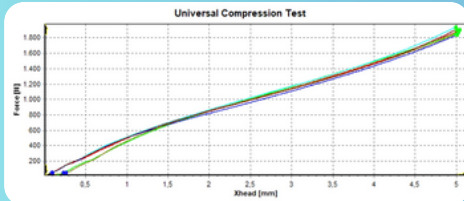


Figure 2. Test Samples



Şekil 3. Kuvvet [N] – Xhead [mm] Numuneler için Diyagram

Numune	Maksimum Gerilme (MPa)	Maksimum Yük (N)	Akma Yükü (N)
A	9.45 ± 0.20	1900 ± 39	577 ± 13
B	9.29 ± 0.20	1868 ± 39	546 ± 13
C	9.15 ± 0.20	1840 ± 39	571 ± 13
D	9.19 ± 0.20	1848 ± 39	557 ± 13
E	9.66 ± 0.20	1941 ± 39	578 ± 13
F	9.49 ± 0.20	1908 ± 39	559 ± 13

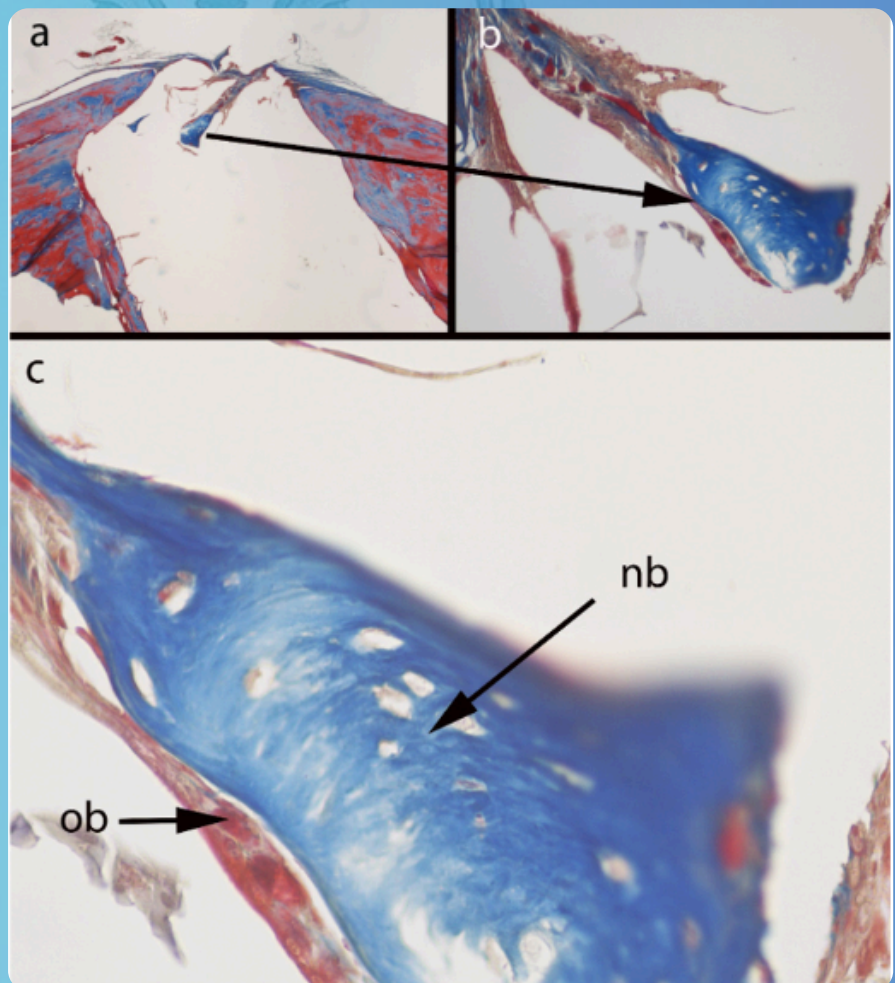
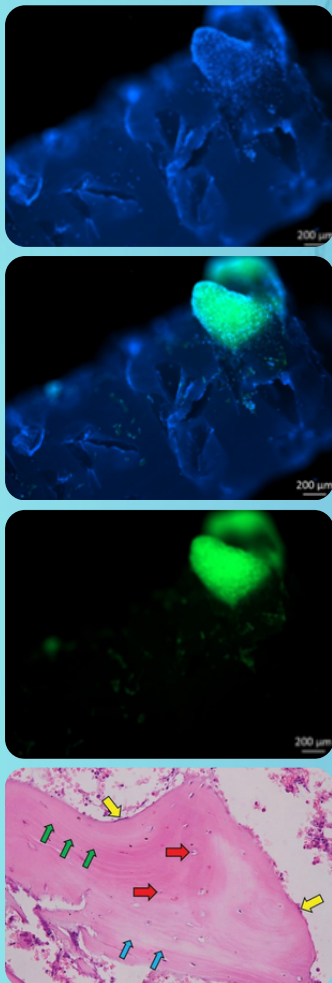


Histopathological Findings and Evaluation of Tissue Compatibility

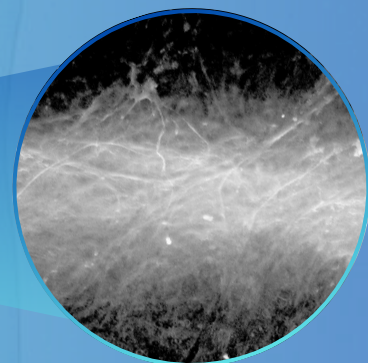
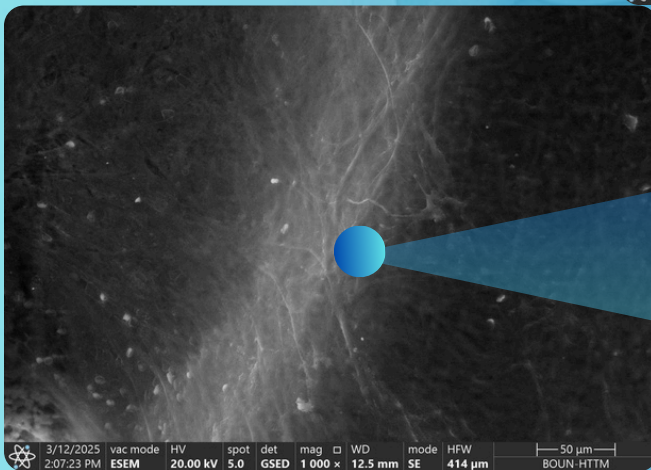
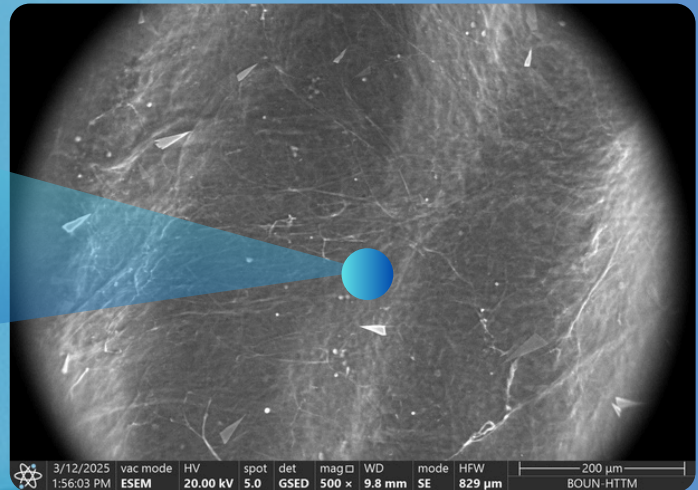
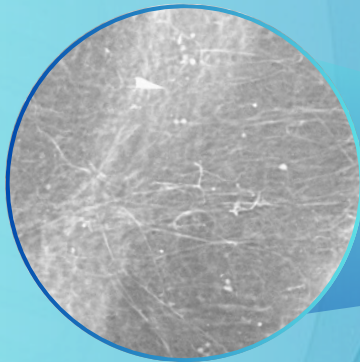
Histological examinations (Hematoxylin-Eosin and Masson Trichrome staining) of tissue samples collected at the end of the study revealed the following findings:

- The biocompatibility of Bloocell® Bioscaffold is remarkably high, with no evidence of foreign body reaction or inflammation observed.
- The presence of osteoblasts and new bone tissue formation were detected around the implant in both cell-seeded and cell-free groups.
- Microscopic analysis confirmed that Bloocell® Scaffold is gradually resorbed and replaced by natural bone tissue.
- In cell-enriched groups, bone formation appeared more organized and denser.

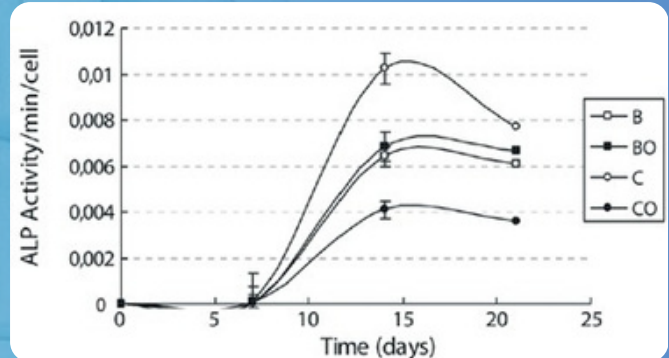
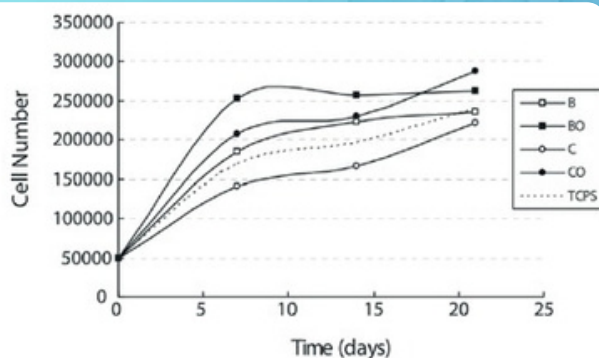
These results demonstrate that Bloocell® Bioscaffold not only provides mechanical support but also creates a biologically active and safe microenvironment for bone regeneration.



Proliferation of Mesenchymal Stem Cells (MSCs) on PCL Scaffold



The ALP results correlate with the cell proliferation tests. Higher ALP activity values were observed in samples with lower cell proliferation. In accordance with these measurements and consistent with high cross-proliferation rates, mesenchymal stem cell (MSC) differentiation (indicated by high ALP activity) was observed on the scaffold surface. These findings demonstrate that Bloocell® Bioscaffold not only provides physical support but also actively supports and regulates cellular activities.

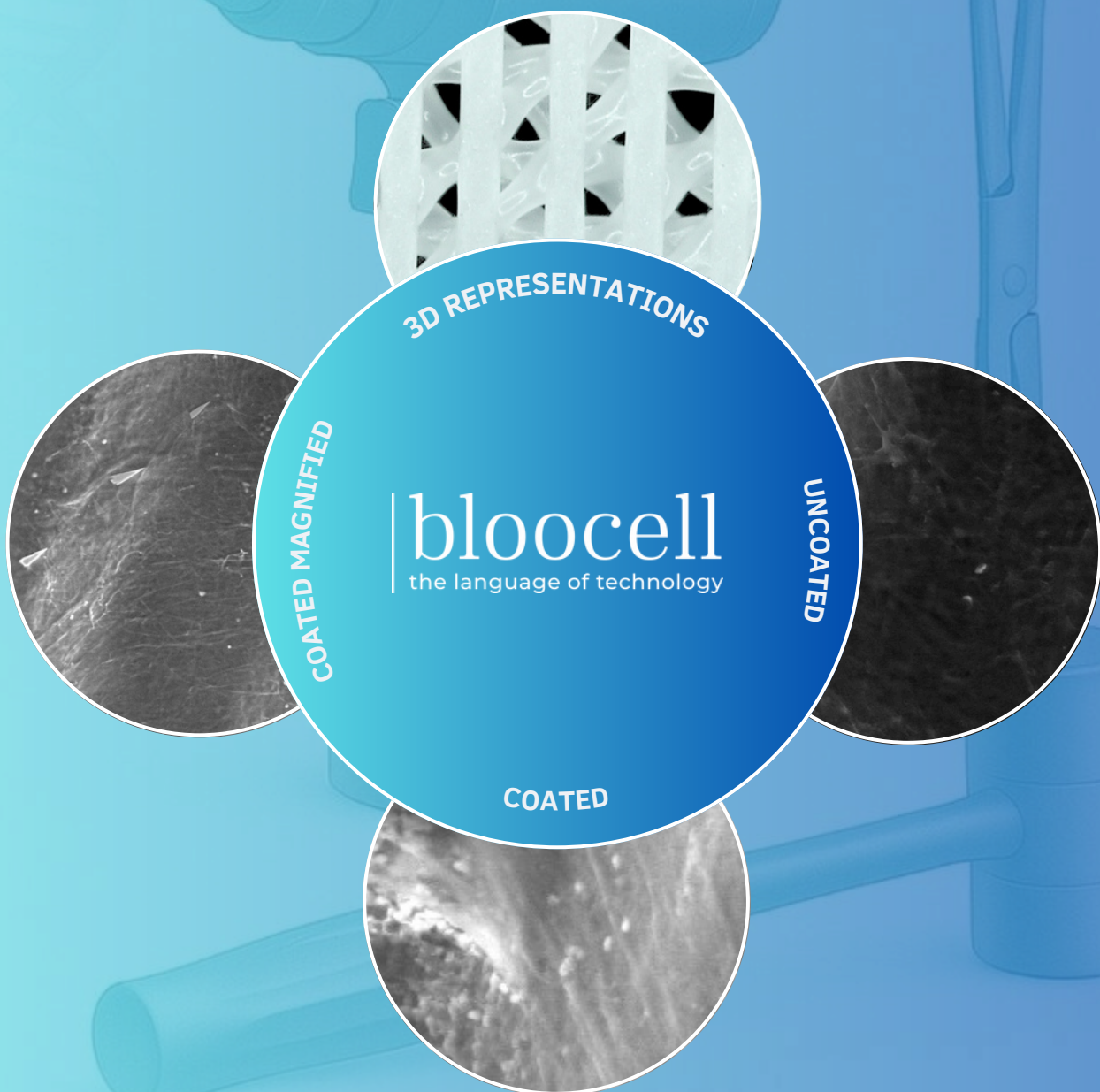


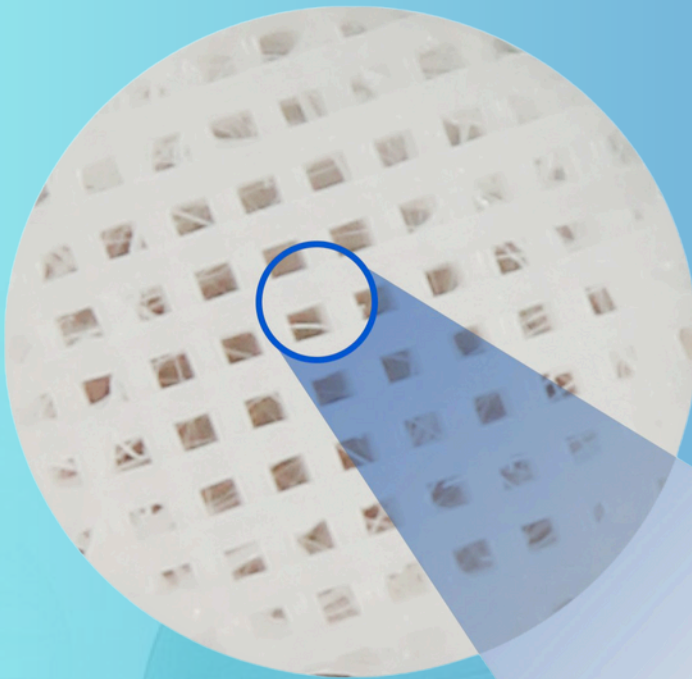
Bloocell® Bioscaffold is a bioresorbable polymeric scaffold system developed for the repair of bone defects and articular tissues.

Its porous structure, which mimics trabecular bone architecture, allows the passage of bone marrow, vascular structures, and nutrients, thereby supporting autologous regeneration.

Enriched with hyaluronic acid, its polycaprolactone (PCL) content provides biocompatibility and resorbability, offering an effective regenerative platform that supports the natural healing processes of bone and cartilage tissues.

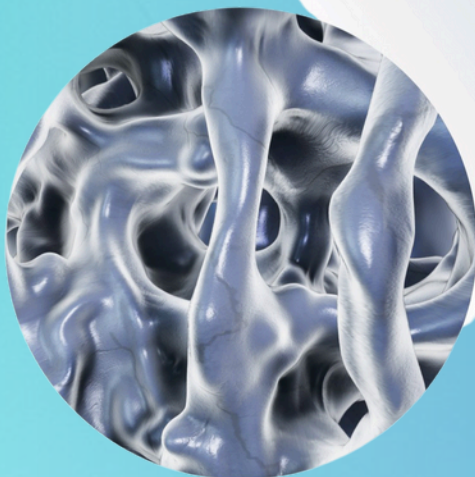
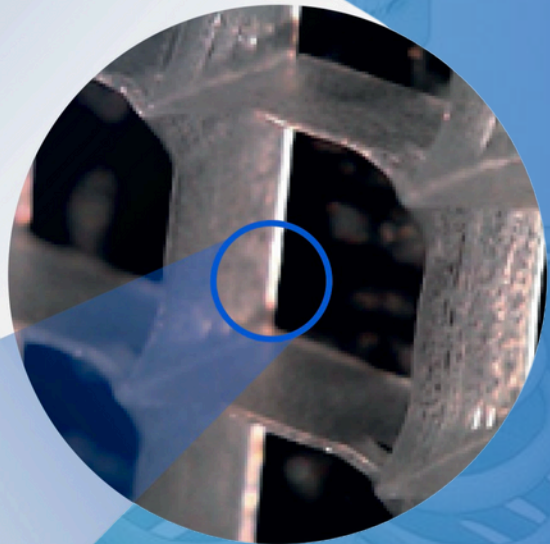
Due to its biomimetic and bioresorbable properties, this technology is classified as a medical device.





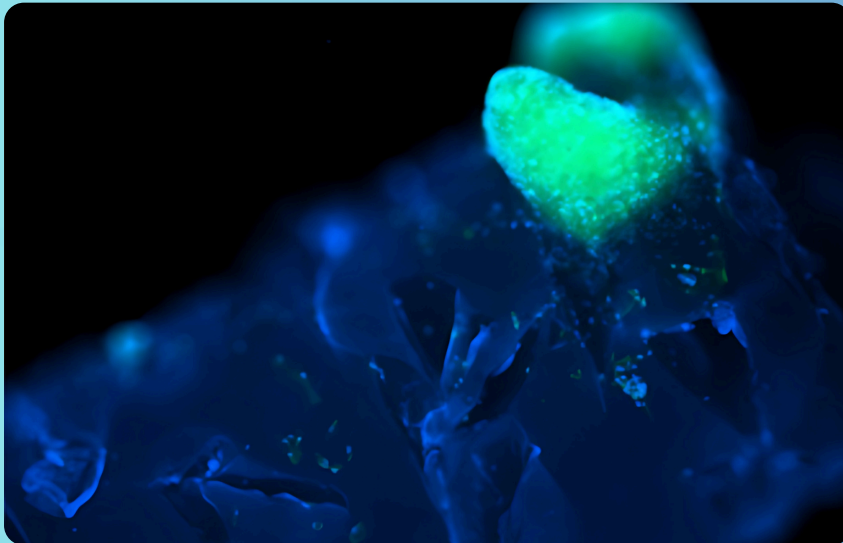
Hyaluronic acid (HA) has a water content similar to human tissue, exhibits excellent biocompatibility, and supports cell proliferation.

Bloocell® Bioscaffold provides the patient's own cells with the chemical signals necessary for bone growth and remodeling.



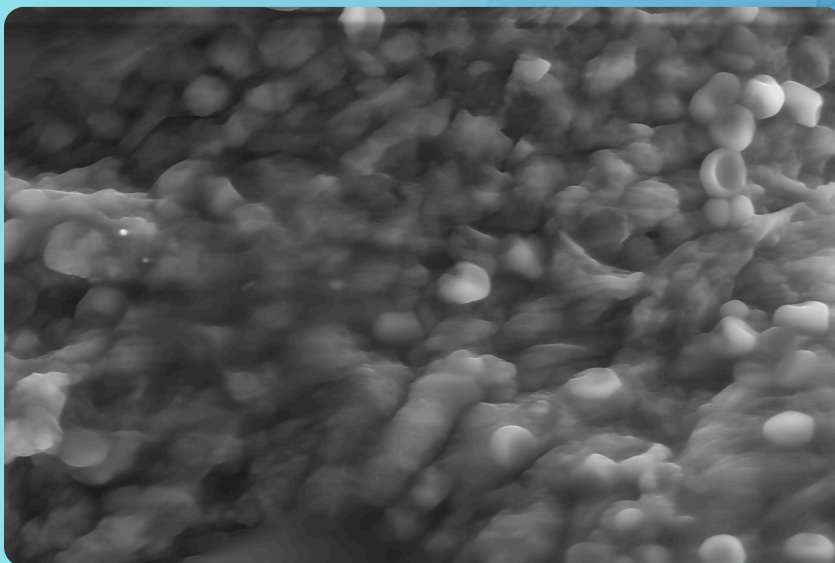
Since hyaluronic acid (HA) is rich in hydroxyl and carboxyl groups, it can form a hydrogel under conditions such as chemical modification, crosslinking, or photo-crosslinking.

Vascularization and Mineral Deposition



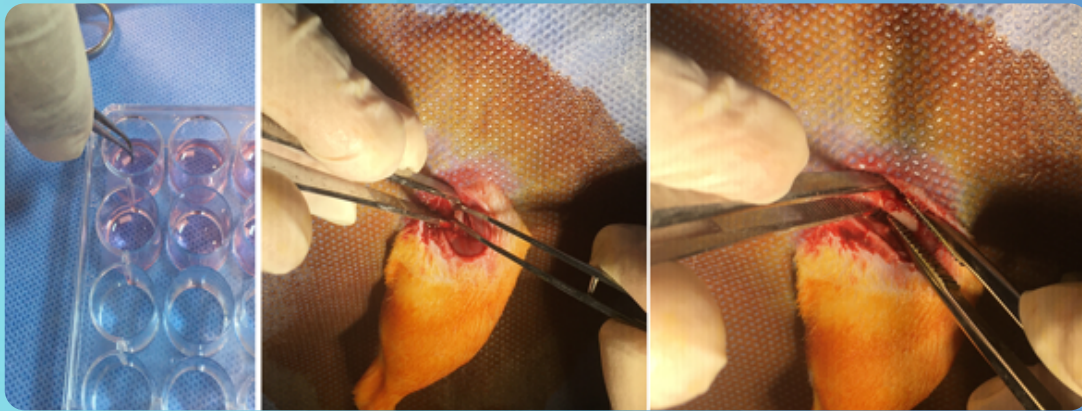
This image illustrates vascularization and tissue integration in both cell-free and cell-seeded bioscaffolds. While cell-free bioscaffolds exhibit limited integration and lack vascular structures, the addition and cultivation of cells enhance tissue organization and vascular formation. Immunofluorescence analyses reveal pronounced vessel development and vascularization in the cultured bioscaffolds.

Recovery of Complex Geometric Features

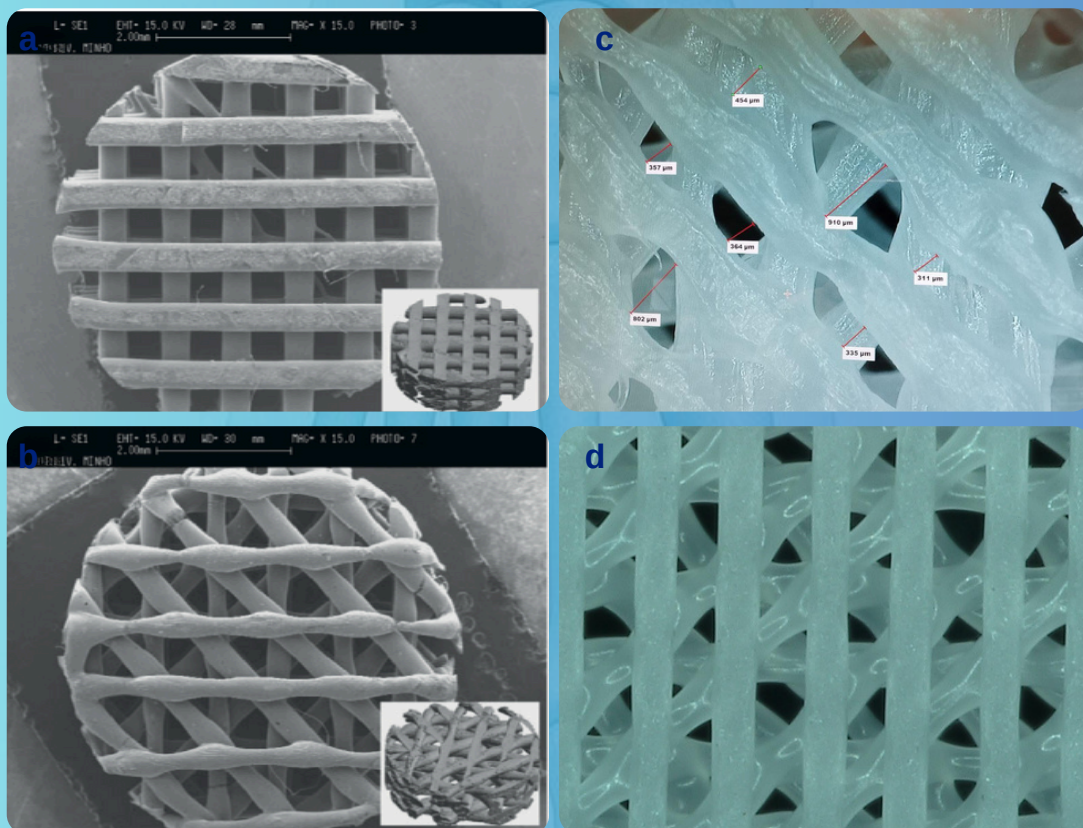


The visuals related to “Recovery” illustrate the reprocessing of used materials and the technologies involved. They demonstrate the stages of recycling, changes in material shape, and the geometric characteristics of the final product. Additionally, micro-level changes in the material are also highlighted.

The effectiveness of Bloocell® Bioscaffold can be enhanced by loading it with growth factors that mimic natural conditions, offering significant potential for clinical applications.



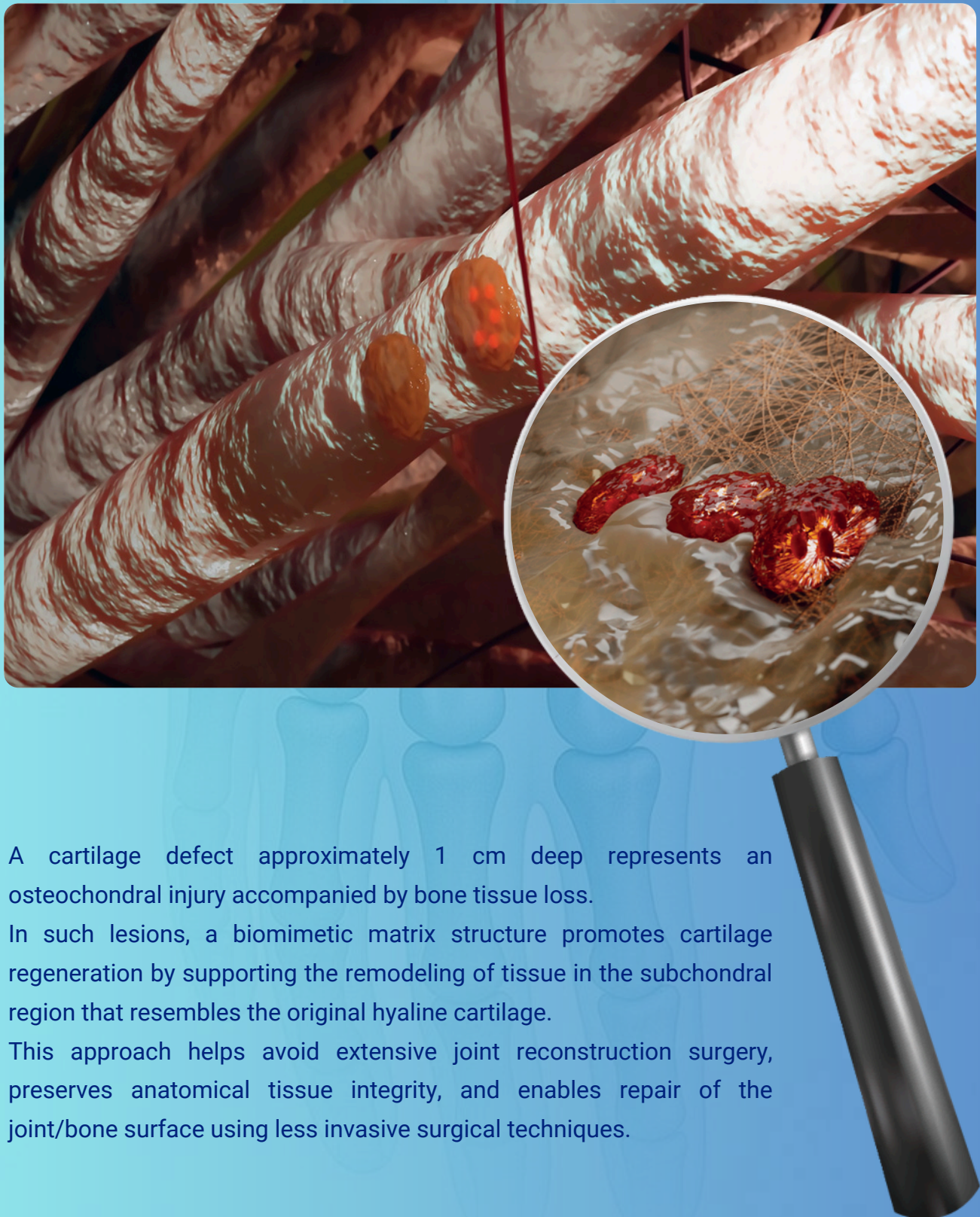
Implantation and Surgical Images from Preclinical Studies



(a,b) P Yilgor, RA Sousa, RL Reis, N Hasirci... - 3D Plotted PCL Scaffolds for Stem Cell Based Bone Tissue Engineering Macromolecular ..., 2008 – Wiley Online Library

(c,d) Microscopic Examination of the Bioscaffold After Manufacturing

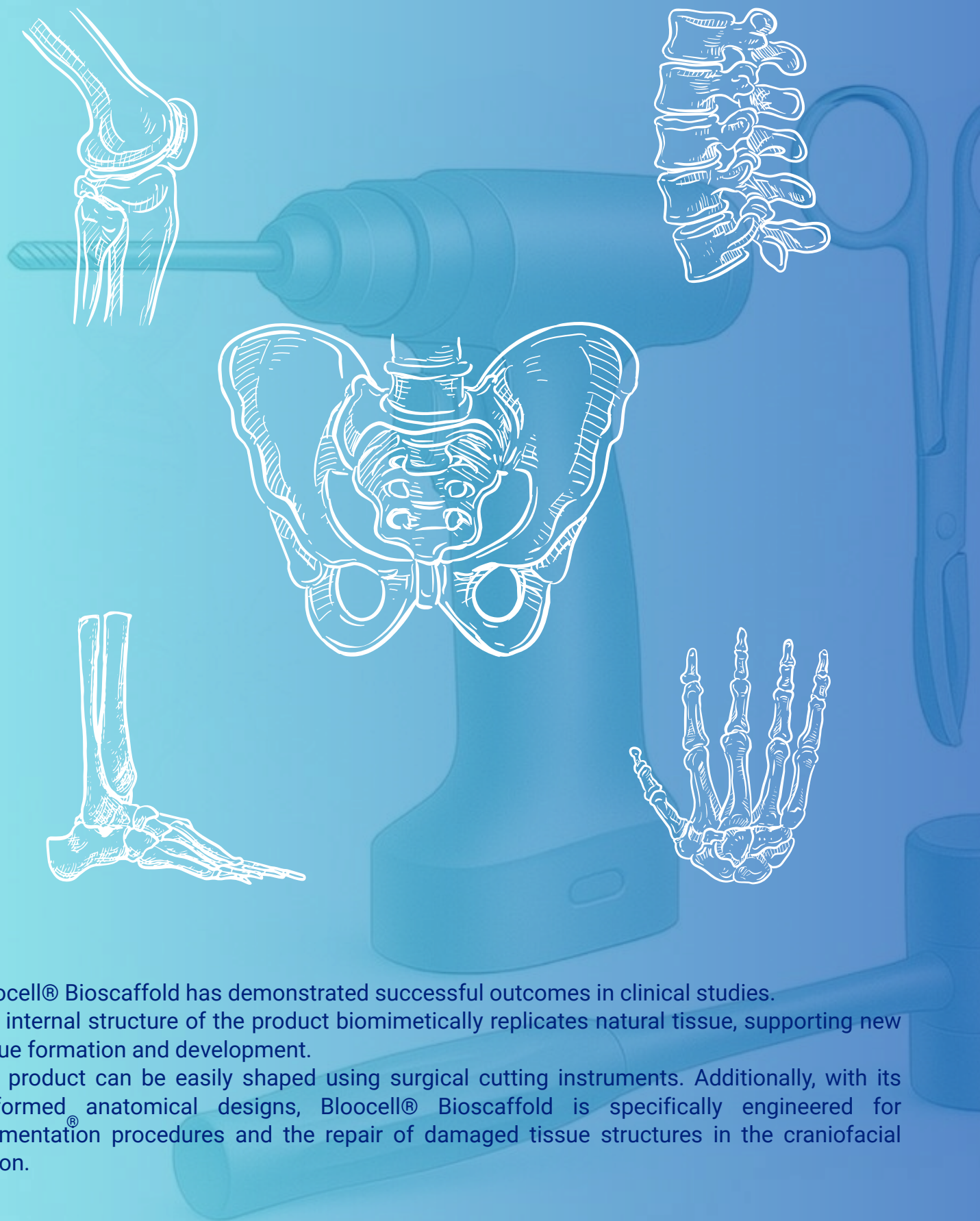
The pore size, shape, and necessary structural integrity of the architectural scaffold are designed to ensure strength, load-bearing capacity, and an optimal microenvironment for cells and tissue ingrowth.



A cartilage defect approximately 1 cm deep represents an osteochondral injury accompanied by bone tissue loss.

In such lesions, a biomimetic matrix structure promotes cartilage regeneration by supporting the remodeling of tissue in the subchondral region that resembles the original hyaline cartilage.

This approach helps avoid extensive joint reconstruction surgery, preserves anatomical tissue integrity, and enables repair of the joint/bone surface using less invasive surgical techniques.



Bloocell® Bioscaffold has demonstrated successful outcomes in clinical studies. The internal structure of the product biomimetically replicates natural tissue, supporting new tissue formation and development. The product can be easily shaped using surgical cutting instruments. Additionally, with its preformed anatomical designs, Bloocell® Bioscaffold is specifically engineered for augmentation procedures and the repair of damaged tissue structures in the craniofacial region.

INDICATIONS

1

It is used for fracture repair, filling surgical defects, and providing tissue support.

2

During the process of bone and/or tissue regeneration and remodeling, the scaffold gradually transforms into the desired structure over time.

3

Thanks to its unique porous architecture, it rapidly becomes saturated with bone marrow, blood, and nutrients.

4

It provides the patient's own cells with the biochemical signals necessary for bone formation and remodeling.

5

Its mesh-like structure offers both rigidity and flexibility, allowing it to adapt to various anatomical regions.

6

It possesses sufficient mechanical strength and supports bone ingrowth.

7

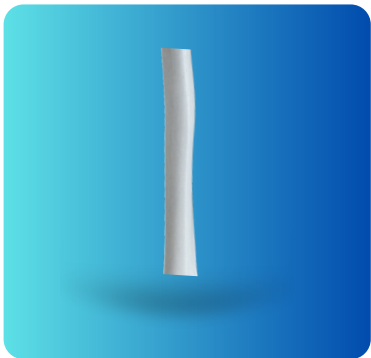
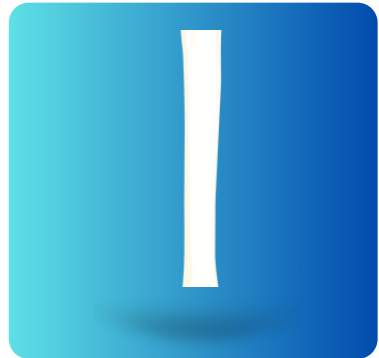
During the bone regeneration and remodeling process, the implant is gradually broken down and naturally resorbed.

sabitenmesi

PRODUCT CATALOG

BLOOCELL® BIOSCAFFOLD
NEXT-GENERATION BONE & TISSUE REGENERATION





Bloocell® Bioscaffold Sheets



	DESCRIPTION	A mm	B mm	THICKNESS mm
55000	Bloocell® Bioscaffold Sheets	20	20	1.25
55001	Bloocell® Bioscaffold Sheets	20	30	1.25
55002	Bloocell® Bioscaffold Sheets	20	40	1.25
55003	Bloocell® Bioscaffold Sheets	20	50	1.25
55004	Bloocell® Bioscaffold Sheets	30	30	1.25
55005	Bloocell® Bioscaffold Sheets	40	40	1.25
55006	Bloocell® Bioscaffold Sheets	50	50	1.25
55007	Bloocell® Bioscaffold Sheets	50	75	1.25
55008	Bloocell® Bioscaffold Sheets	75	100	1.25
55009	Bloocell® Bioscaffold Sheets	100	100	1.25
55010	Bloocell® Bioscaffold Sheets	100	150	1.25
55011	Bloocell® Bioscaffold Sheets	150	150	1.25
55012	Bloocell® Bioscaffold Sheets	150	200	1
55013	Bloocell® Bioscaffold Sheets	20	20	1
55014	Bloocell® Bioscaffold Sheets	20	30	1
55015	Bloocell® Bioscaffold Sheets	20	40	1
55016	Bloocell® Bioscaffold Sheets	20	50	1
55017	Bloocell® Bioscaffold Sheets	30	30	1
55018	Bloocell® Bioscaffold Sheets	40	40	1
55019	Bloocell® Bioscaffold Sheets	50	50	1
55020	Bloocell® Bioscaffold Sheets	50	75	1
55021	Bloocell® Bioscaffold Sheets	75	100	1
55022	Bloocell® Bioscaffold Sheets	100	100	1
55023	Bloocell® Bioscaffold Sheets	100	150	1
55024	Bloocell® Bioscaffold Sheets	150	150	0.8
55025	Bloocell® Bioscaffold Sheets	150	200	0.8
55026	Bloocell® Bioscaffold Sheets	20	20	0.8
55027	Bloocell® Bioscaffold Sheets	20	30	0.8
55028	Bloocell® Bioscaffold Sheets	20	40	0.8
55029	Bloocell® Bioscaffold Sheets	20	50	0.8
55030	Bloocell® Bioscaffold Sheets	30	30	0.8
55031	Bloocell® Bioscaffold Sheets	40	40	0.8
55032	Bloocell® Bioscaffold Sheets	50	50	0.8
55033	Bloocell® Bioscaffold Sheets	50	75	0.8
55034	Bloocell® Bioscaffold Sheets	75	100	0.8
55035	Bloocell® Bioscaffold Sheets	100	100	0.8

CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
55036	Bloocell® Bioscaffold Sheets	100	150	0.8
55037	Bloocell® Bioscaffold Sheets	150	150	0.8
55038	Bloocell® Bioscaffold Sheets	200	200	0.8
55039	Bloocell® Bioscaffold Sheets	20	20	0.6
55040	Bloocell® Bioscaffold Sheets	20	30	0.6
55041	Bloocell® Bioscaffold Sheets	20	40	0.6
55042	Bloocell® Bioscaffold Sheets	20	50	0.6
55043	Bloocell® Bioscaffold Sheets	30	30	0.6
55044	Bloocell® Bioscaffold Sheets	40	40	0.6
55045	Bloocell® Bioscaffold Sheets	50	50	0.6
55046	Bloocell® Bioscaffold Sheets	50	75	0.6
55047	Bloocell® Bioscaffold Sheets	75	100	0.6
55048	Bloocell® Bioscaffold Sheets	100	100	0.6
55049	Bloocell® Bioscaffold Sheets	100	150	0.6
55050	Bloocell® Bioscaffold Sheets	150	150	0.6
55051	Bloocell® Bioscaffold Sheets	150	200	0.6
55052	Bloocell® Bioscaffold Sheets	20	20	0.4
55053	Bloocell® Bioscaffold Sheets	20	30	0.4
55054	Bloocell® Bioscaffold Sheets	20	40	0.4
55055	Bloocell® Bioscaffold Sheets	20	50	0.4
55056	Bloocell® Bioscaffold Sheets	30	30	0.4
55057	Bloocell® Bioscaffold Sheets	40	40	0.4
55058	Bloocell® Bioscaffold Sheets	50	50	0.4
55059	Bloocell® Bioscaffold Sheets	50	75	0.4
55060	Bloocell® Bioscaffold Sheets	75	75	0.4
55061	Bloocell® Bioscaffold Sheets	20	20	
55062	Bloocell® Bioscaffold Sheets	20	30	
55063	Bloocell® Bioscaffold Sheets	20	40	
55064	Bloocell® Bioscaffold Sheets	20	50	
55065	Bloocell® Bioscaffold Sheets	30	30	
55066	Bloocell® Bioscaffold Sheets	40	40	
55067	Bloocell® Bioscaffold Sheets	50	50	
55068	Bloocell® Bioscaffold Sheets	50	75	
55069	Bloocell® Bioscaffold Sheets	75	75	

Bloocell® Rectangle Sheet



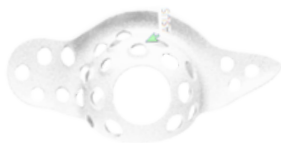
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52336	Bloocell® Rectagle Sheet	40	9	1,1
52339	Bloocell® Rectagle Sheet	13	3,5	0,9

Bloocell® Wedge



CATALOG NO	DESCRIPTION	Diameter mm	Lenght mm
56004	Bloocell® Wedge	6	30
56005	Bloocell® Wedge	8	30
56006	Bloocell® Wedge	6	60
56007	Bloocell® Wedge	8	60
56008	Bloocell® Wedge	10	55
56009	Bloocell® Wedge	12	55
56010	Bloocell® Wedge	14	55
56011	Bloocell® Wedge	16	55
56012	Bloocell® Wedge	18	55

Bloocell® Cage



CATALOG NO	DESCRIPTION	Diameter mm	Lenght mm
57000	Bloocell® Cage	Standart	Standart

Bloocell® Metaphyseal Cone Small



CATALOG NO	DESCRIPTION	A mm	B mm
56601	Bloocell® Metaphyseal Cone Small	Standart	Standart

Bloocell® F Cone



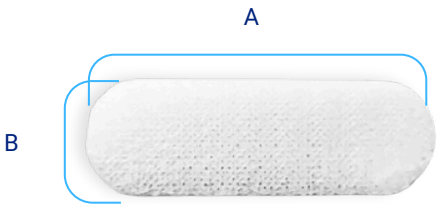
CATALOG NO	DESCRIPTION	A mm	B mm
56602	Bloocell® F Cone	Standart	Standart

Bloocell® Diaphyseal Cone



CATALOG NO	DESCRIPTION	A mm	B mm
56600	Bloocell® Diaphyseal Cone	Standart	Standart

Bloocell® Gap



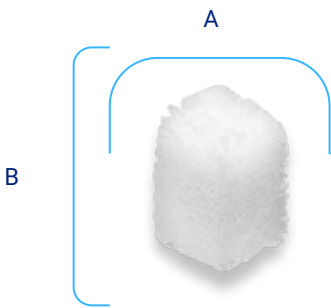
CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
59000	Bloocell® Gap	35	21	10
59100	Bloocell® Gap	36	23	12

Bloocell® C Shape



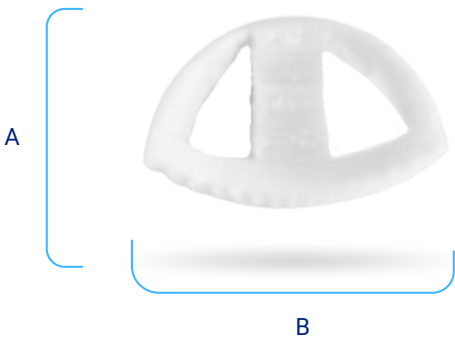
CATALOG NO	DESCRIPTION	A mm	B mm
59000	Bloocell® C Shape		

Bloocell® Free Block



CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
59170	Bloocell® Free Block	76	61	19
59180	Bloocell® Free Block	90	73	19
59190	Bloocell® Free Block	101	85	19
59200	Bloocell® Free Block	95	58	4.5
59210	Bloocell® Free Block	102	10	4.7

Bloocell® Acetabular Cage



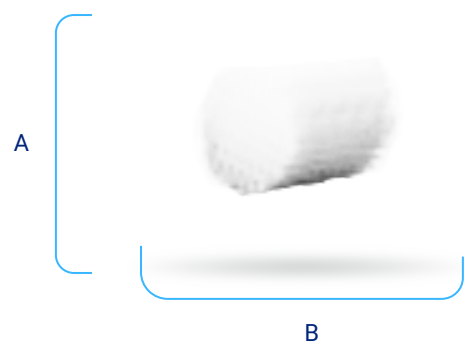
CATALOG NO	DESCRIPTION	Diameter mm	Lenght mm
56013	Bloocell® Acetabular Cage	49	9
56014	Bloocell® Acetabular Cage	49	11
56015	Bloocell® Acetabular Cage	49	13
56016	Bloocell® Acetabular Cage	53	9
56017	Bloocell® Acetabular Cage	53	11
56018	Bloocell® Acetabular Cage	53	13
56019	Bloocell® Acetabular Cage	57	9
56020	Bloocell® Acetabular Cage	57	11
56021	Bloocell® Acetabular Cage	57	13
56022	Bloocell® Acetabular Cage	61	9
56023	Bloocell® Acetabular Cage	61	11
56024	Bloocell® Acetabular Cage	61	13

Bloocell® Plug



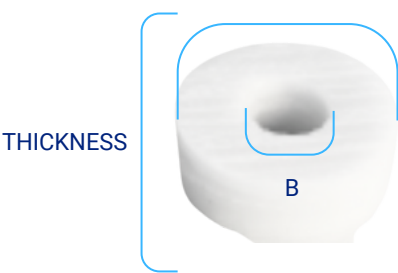
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52007	Bloocell® Plug	12	5
52008	Bloocell® Plug	15	5
52009	Bloocell® Plug	18	5

Bloocell® Cylinder



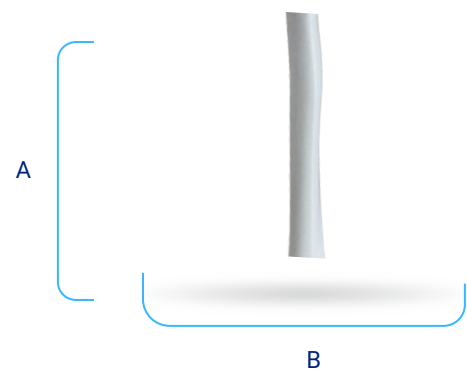
CATALOG NO	DESCRIPTION	Diameter mm	Lenght mm
52001	Bloocell® Cylinder	6	10
52002	Bloocell® Cylinder	8	10
52003	Bloocell® Cylinder	10	10
52004	Bloocell® Cylinder	6	20
52005	Bloocell® Cylinder	8	20
52006	Bloocell® Cylinder	10	20

Bloocell® Glenoid



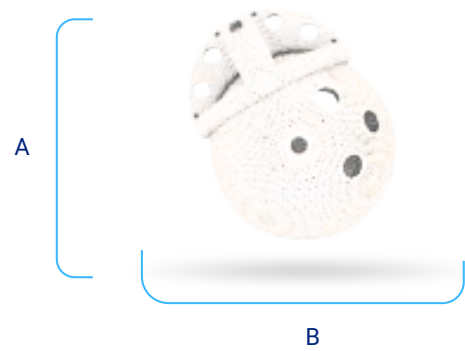
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56013	Bloocell® Glenoid	27	10	Standart
56014	Bloocell® Glenoid	27	10	7.5
56015	Bloocell® Glenoid	27	10	15
56016	Bloocell® Glenoid	27	15	Standart
56017	Bloocell® Glenoid	27	15	7.5
56018	Bloocell® Glenoid	27	15	15

Bloocell® Humerus



CATALOG NO	DESCRIPTION	A mm	B mm
56066	Bloocell® Humerus	Standart	Standart

Bloocell® Hemisphere



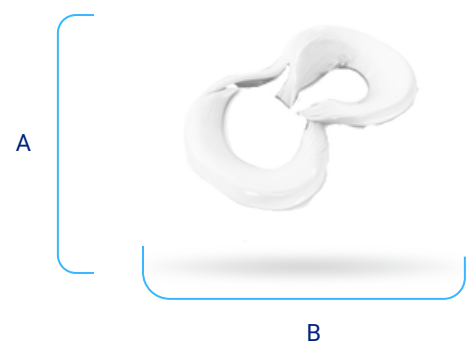
CATALOG NO	DESCRIPTION	A mm	B mm
56067	Bloocell® Hemisphere	Standart	Standart

Bloocell® Hemisphere



CATALOG NO	DESCRIPTION	A mm	B mm
56068	Bloocell® Hemisphere	Standart	Standart

Bloocell® Menisküs



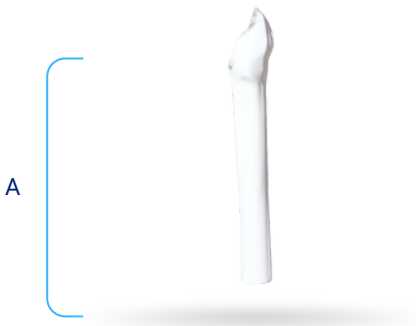
CATALOG NO	DESCRIPTION	A mm	B mm
56069	Bloocell® Menisküs	Standart	Standart

Bloocell® Flex Barrier



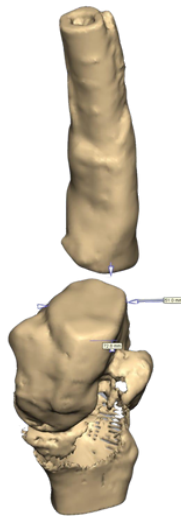
CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52411	BGB Small	70	70	10
52412	BGB Medium	86	88	15
52413	BGB Large	95	98	18

Bloocell® Strut



CATALOG NO	DESCRIPTION	A mm	Diameter mm
56047	Bloocell® Strut	5	110
56048	Bloocell® Strut	6.5	110
56049	Bloocell® Strut	8	110
56050	Bloocell® Strut	10	110
56051	Bloocell® Strut	25	110
56052	Bloocell® Strut	30	110
56053	Bloocell® Strut	35	110
56054	Bloocell® Strut	40	110

CUSTOM-MADE BIOSCAFFOLD



The CT/CBCT data of the bone defect is converted into a three-dimensional model.

Bloocell® Custom Made Bioscaffold delivers not only anatomical compatibility but also high biological performance.

Its bioresorbable nature allows it to be gradually absorbed by the body while supporting the natural formation of new bone tissue.

This technology enables surgical interventions to be carried out in a more planned and successful manner, shortening patient recovery times and achieving more natural long-term results.

With this innovative approach to personalized biomaterials, Bloocell® continues to lead breakthroughs in regenerative medicine and tissue engineering.

Bloocell® Bioscaffold has initiated a new era in jaw reconstruction with its Custom Made production.

The Custom Made Bioscaffold developed by Bloocell® is an implant system designed to perfectly match the patient's bone structure and features bioresorbable properties. This innovative product stands out by offering a personalized solution, particularly for the repair of bone loss or deformities in the jaw.

In this unique jaw surgery application, the patient's medical imaging data (CT/MRI) was analyzed in 3D, and a custom Bloocell® scaffold was designed to anatomically fit the missing or damaged area precisely.



Bloocell® Custom Made Bioscaffold is designed to perfectly fit the patient and offers optimal horizontal and vertical reconstruction opportunities in atrophic tibial regions.

BLOOCELL® VR LABORATORY



Bloocell® develops solutions that integrate digital technologies with biotechnology, delivering high precision and safety in medical applications. Thanks to an advanced 3D simulation infrastructure, surgeons can virtually perform procedures in detail before surgery and analyze implant or biomaterial designs comprehensively.

This pre-assessment process enhances operational accuracy and minimizes error and deviation rates.

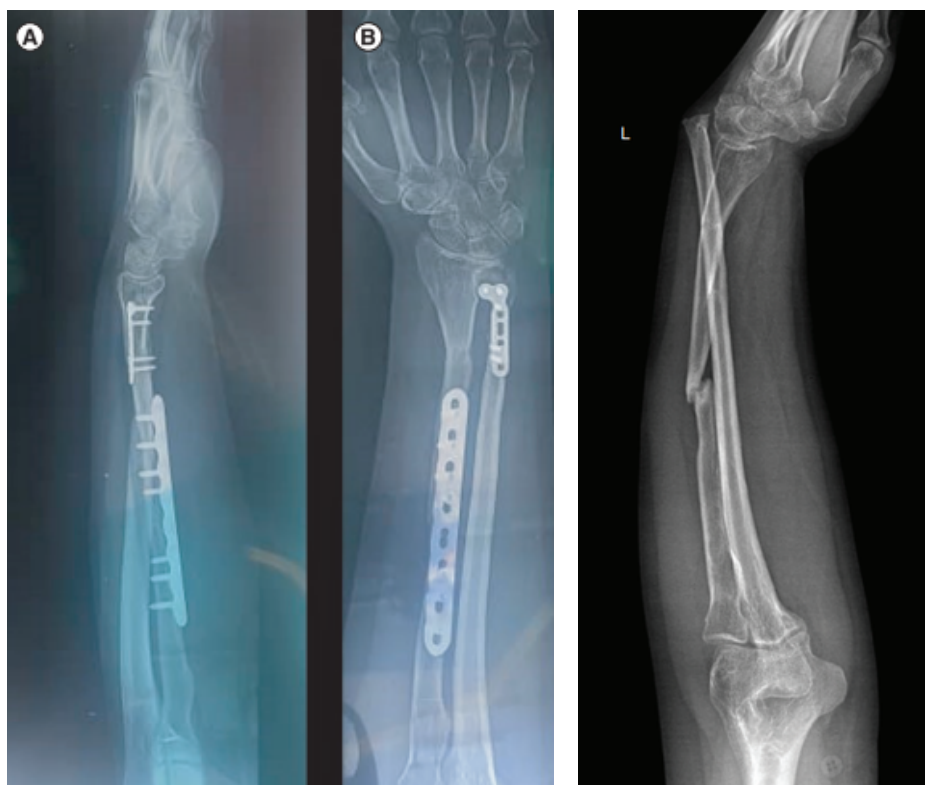
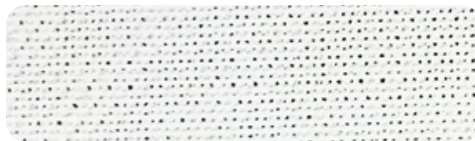
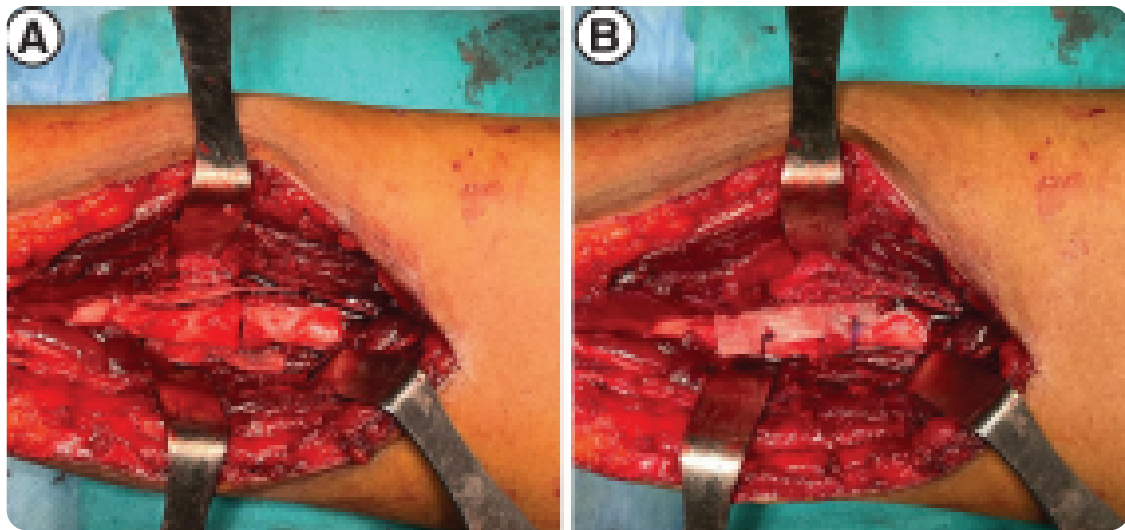
Bloocell® continues to drive transformation in health technologies through interdisciplinary engineering approaches.

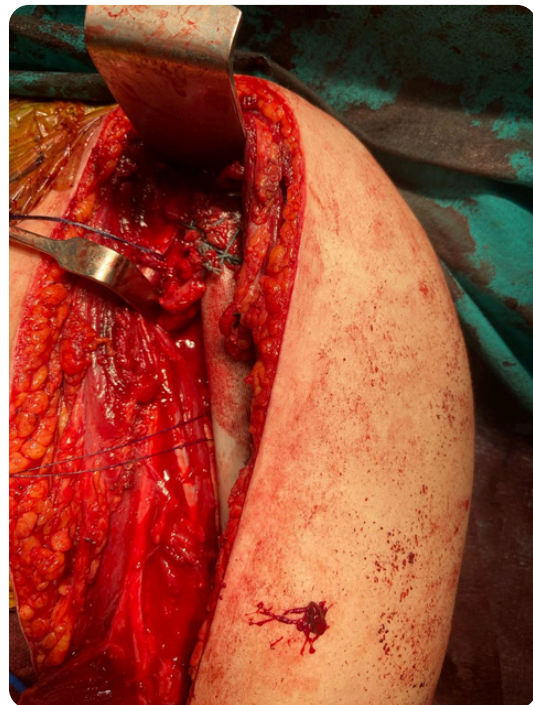
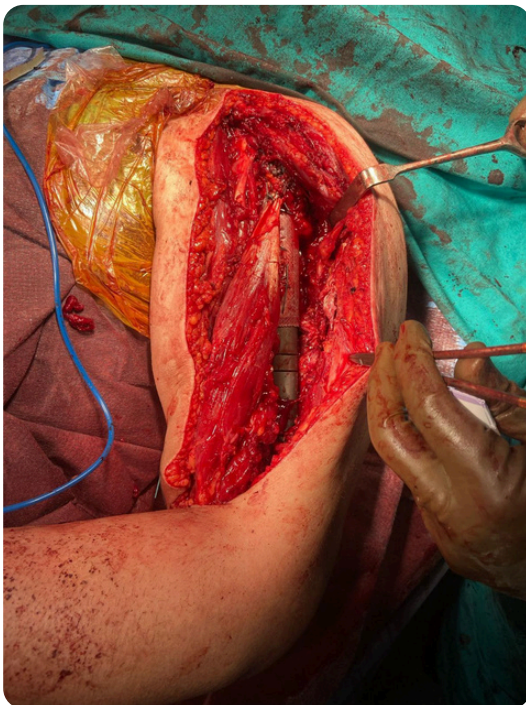
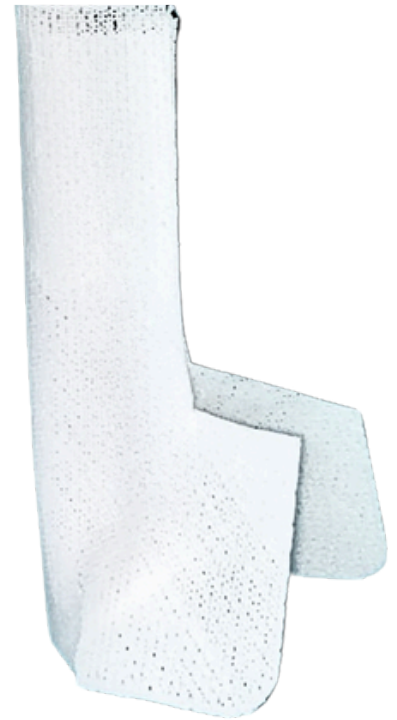


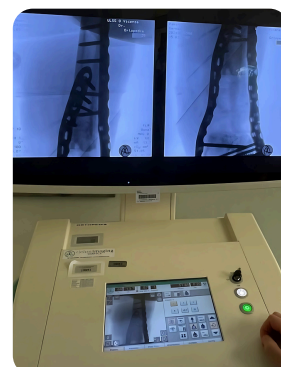
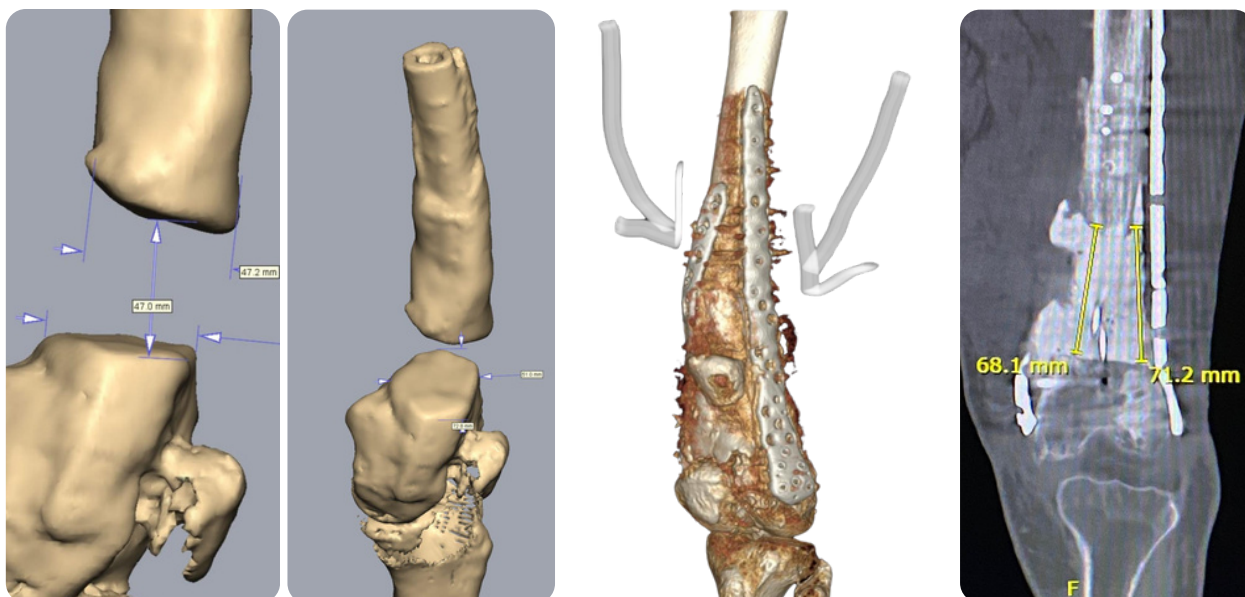


Bloocell® VR opens the door to a new era by making preoperative planning more precise and secure for surgeons.

3D models created from real case data reduce risks and increase success rates.







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