



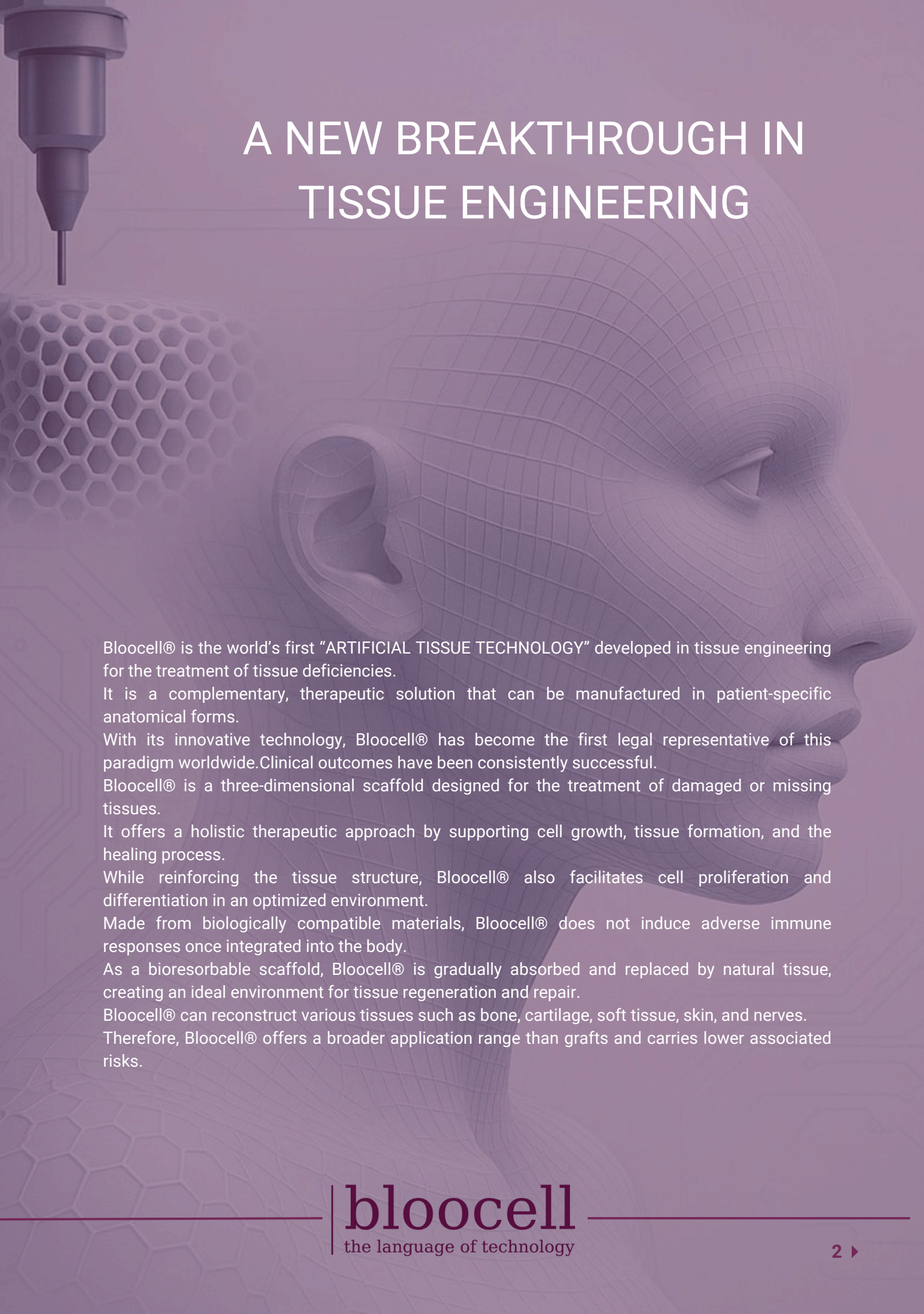
|bloocell[®]

| the language of technology

THE GOLDEN
REVOLUTION IN
BIOTECHNOLOGY

BONE-FREE TREATMENT IN
AESTHETIC SURGERY

ARTIFICIAL TISSUE TECHNOLOGY



A NEW BREAKTHROUGH IN TISSUE ENGINEERING

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

It is a complementary, 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 outcomes 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 natural tissue, creating an ideal environment for tissue regeneration and repair.

Bloocell® can reconstruct various tissues 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 following extensive laboratory and preclinical studies conducted by scientists worldwide.

After obtaining all required regulatory approvals, it was developed into a market-ready product.

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

The successful 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 leading organizations 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 symbolizes a major paradigm shift from conventional “standard bone graft” treatment toward tissue engineering.

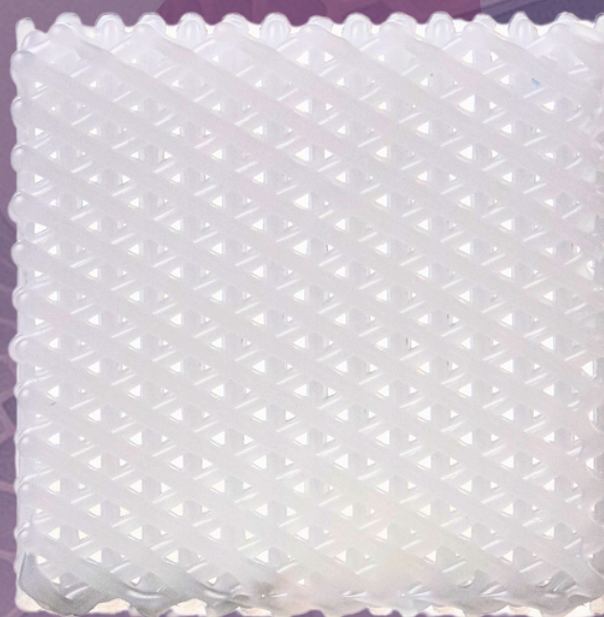
The product is used to provide sufficient load-bearing support during bone regeneration, mimic the mechanical structure of tissue, and promote tissue renewal.

Bloocell® Bioscaffold is a three-layer scaffold composed of PCL (Polycaprolactone), HA (Hyaluronic Acid), and β -TCP (Beta-Tricalcium Phosphate), designed for the repair and regeneration of degenerative and post-traumatic bone and cartilage defects.

Bloocell® Bioscaffold contains no animal-derived or human-derived tissue components.

Studies examining the mechanical structure of Bloocell® Bioscaffold have shown high levels of cell proliferation, adhesion, and spreading on its surface.

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



Mechanical Properties and Test Results

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

The product is optimized to provide the necessary load-bearing support during bone regeneration in the applications where it is used.

The mechanical durability 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 the mechanical performance of biomaterials and implants under compressive forces.

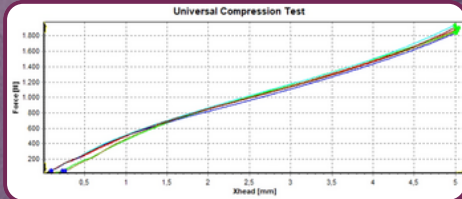
Static Compression Test Results



Figure 1. Schematic Diagram of the Test Setup

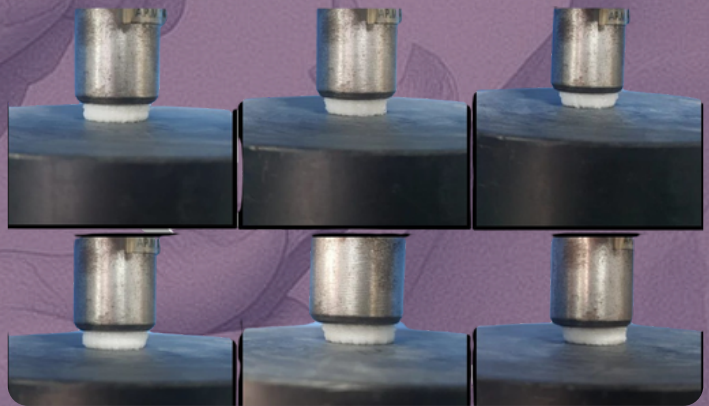


Figure 2. Test Samples



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

Numune	Maksimum Gerilme (MPa)	Maksimum Yük (N)	Akma Yüğü (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

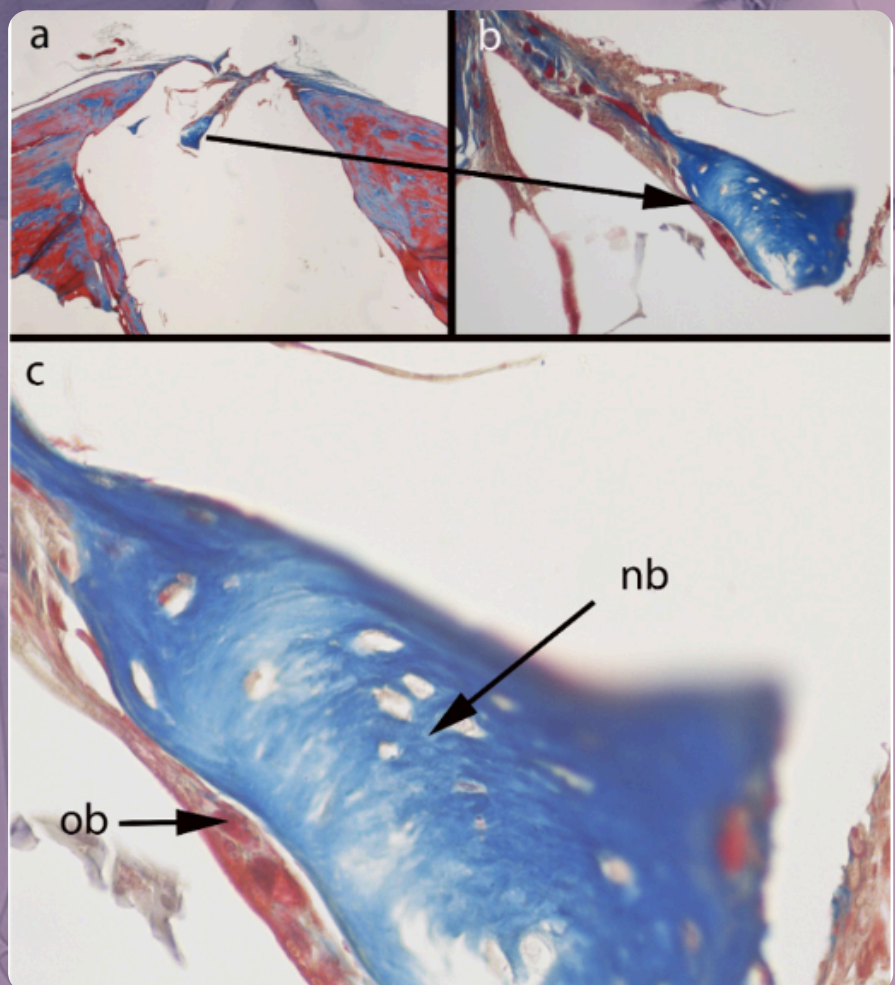
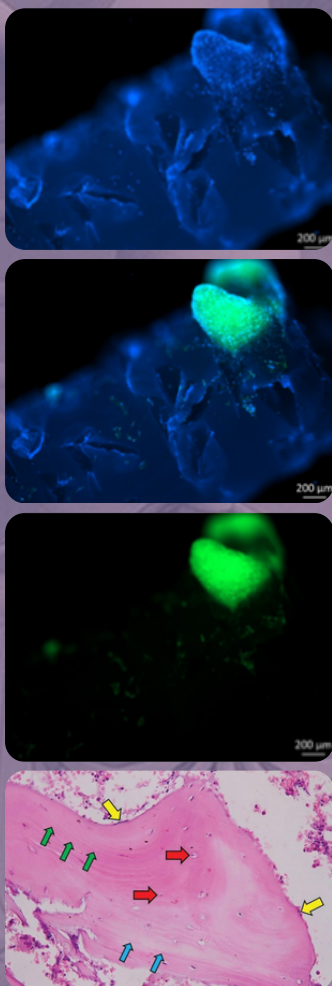


Histopathological Findings and Evaluation of Tissue Compatibility

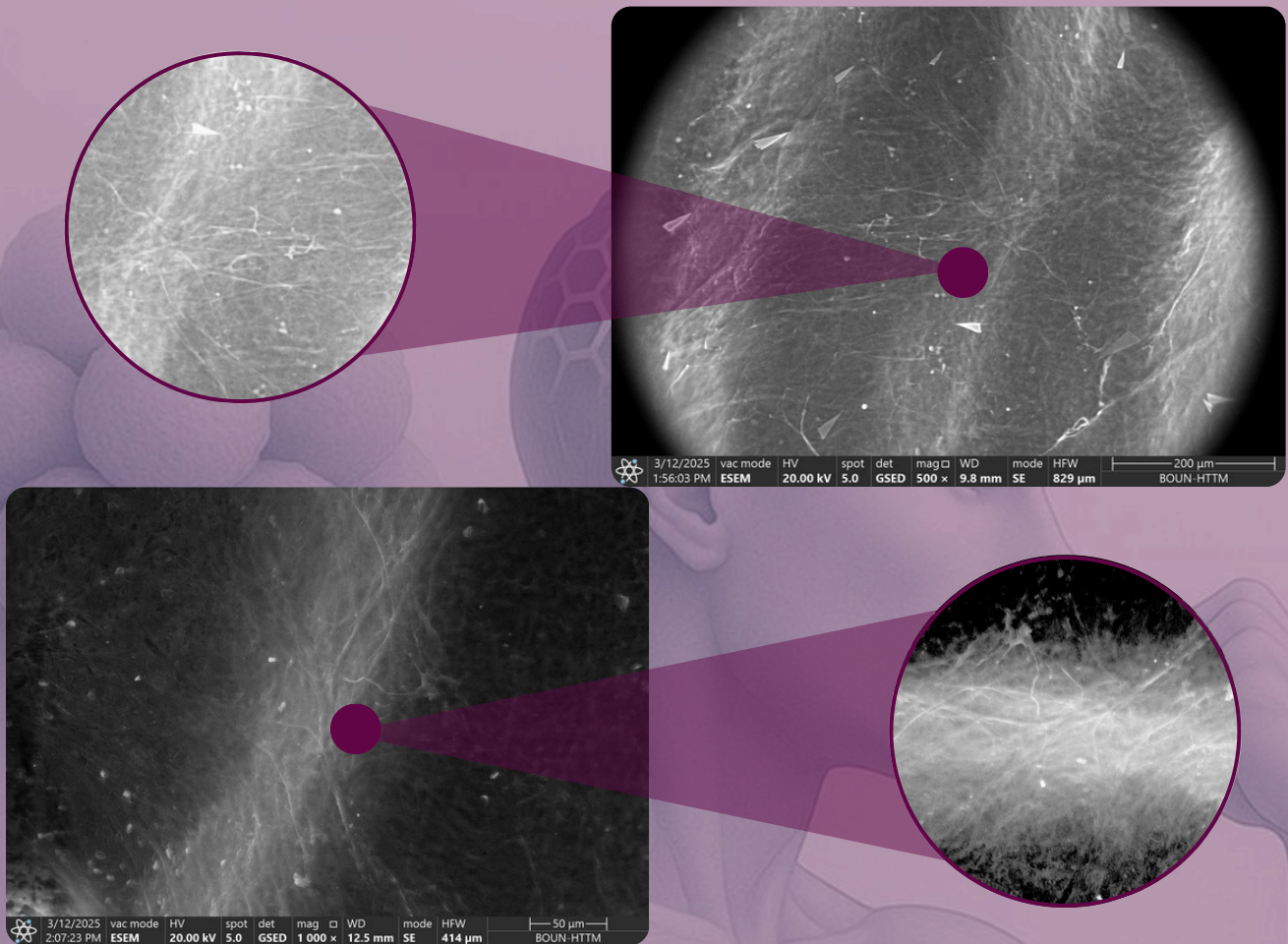
Histological examinations (Hematoxylin-Eosin and Masson Trichrome staining) of tissue samples collected at the end of the study revealed the following findings:

- Bloocell® Bioscaffold exhibits high biocompatibility, with no foreign body reactions 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 was more organized and denser.

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



Proliferation of Mesenchymal Stem Cells (MSCs) on PCL Scaffold

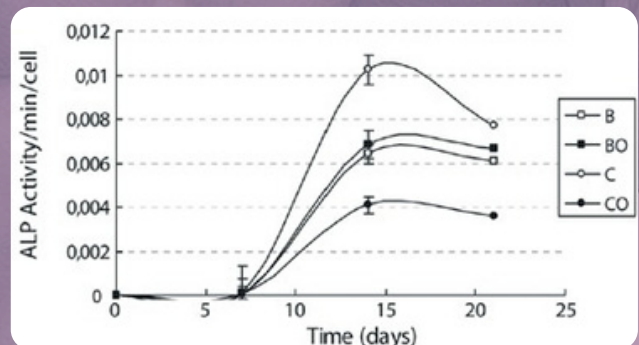
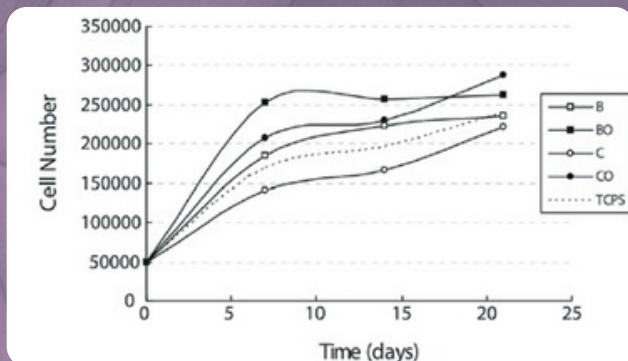


The ALP results correlate with the cell proliferation tests.

Higher ALP activity values were observed in samples with lower cell proliferation.

Consistent with these measurements and the 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.



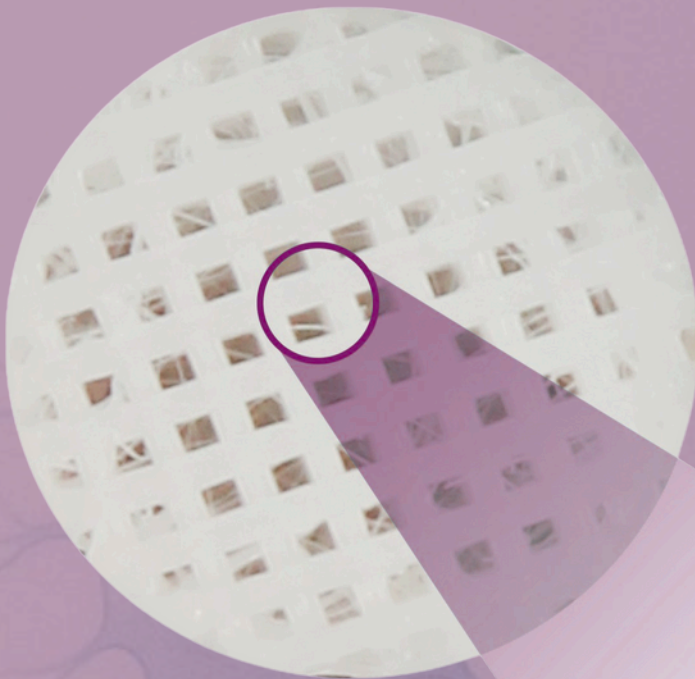
Bloocell® Bioscaffold is a bioresorbable polymeric scaffold system developed for the repair of bone defects and articular tissues.

Its porous structure, mimicking 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.

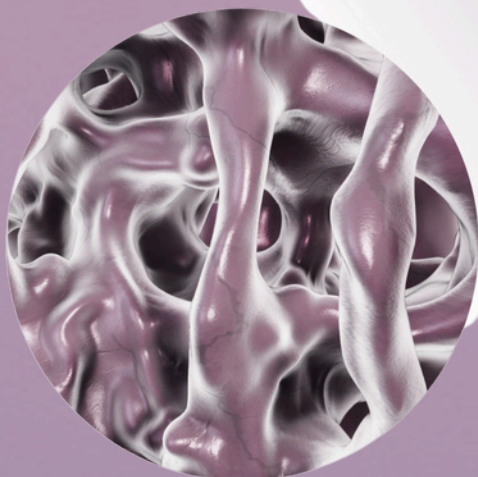
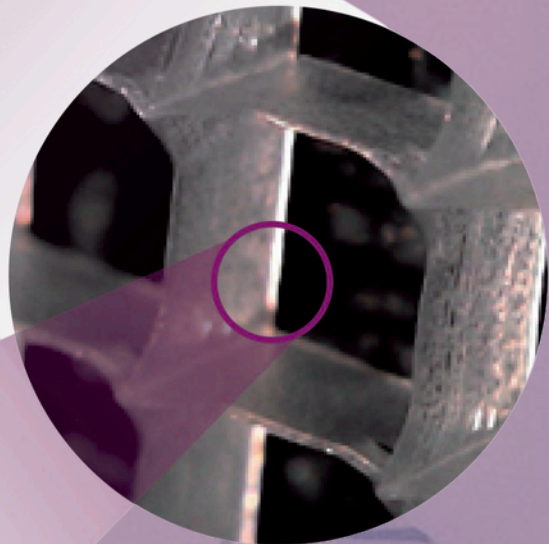
This technology is classified as a medical device due to its biodegradable and bioresorbable properties.





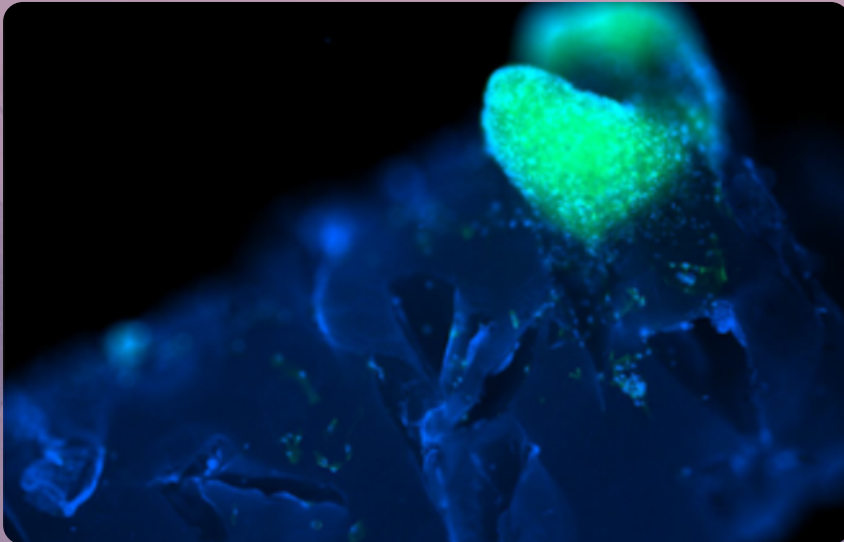
Hyaluronic acid (HA) has a water content similar to human tissue, exhibits excellent biocompatibility, and supports cell proliferation.

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



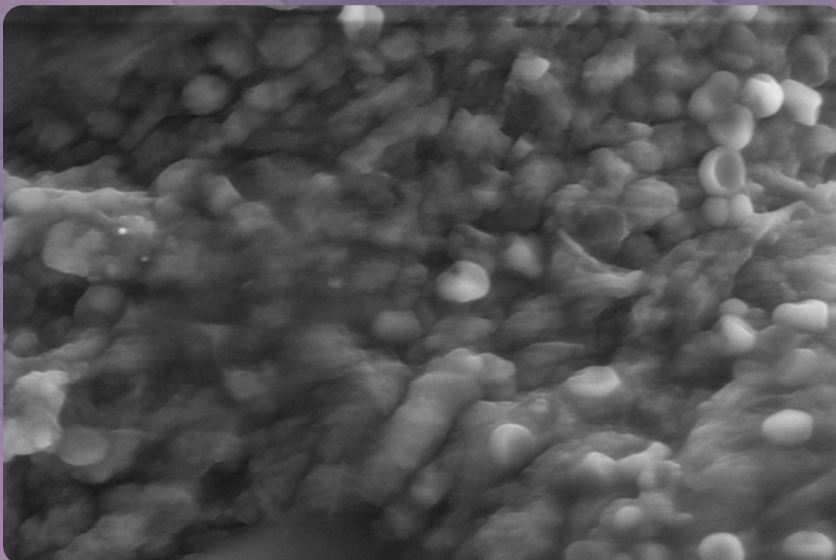
Because hyaluronic acid (HA) is rich in hydroxyl and carboxyl groups, it can form a hydrogel under conditions such as chemical modification, crosslinking, or photo-crosslinking.

Vascularization and Mineral Deposition



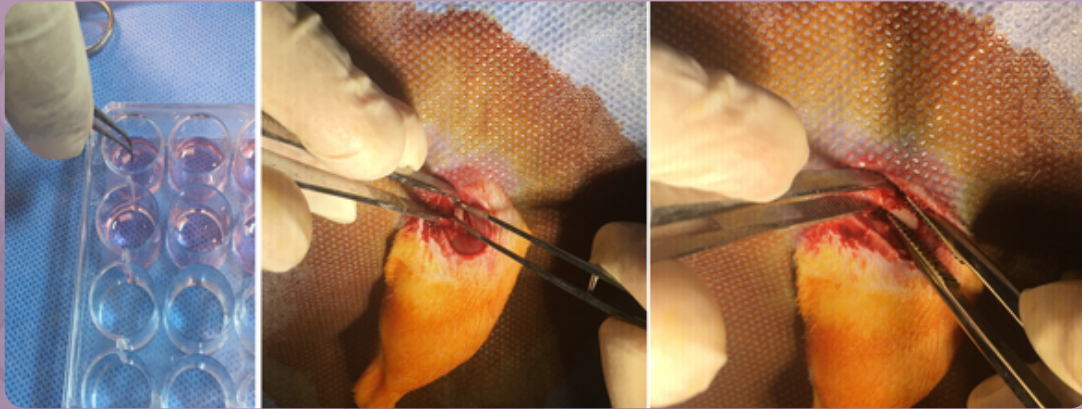
This image illustrates vascular formation and tissue integration in both cell-free and cell-seeded bioscaffolds. While cell-free bioscaffolds show limited integration and lack vascular structures, the addition and cultivation of cells enhances tissue organization and vascular development. Immunofluorescence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

Recovery of Complex Geometric Features

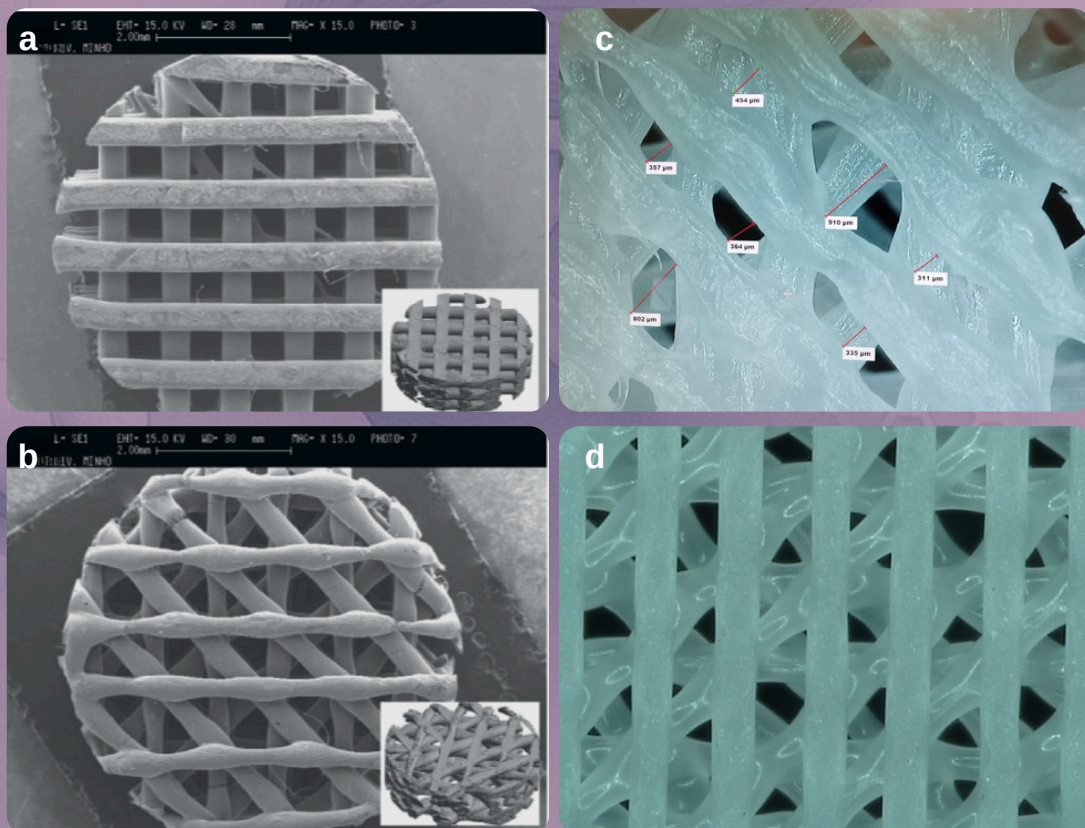


The visuals related to "Recovery" illustrate the process of reprocessing recycled materials and the technologies involved. They explain the stages of recycling, changes in the material's shape, and the geometric characteristics of the final product. Additionally, they highlight micro-level changes occurring in the material.

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 Production

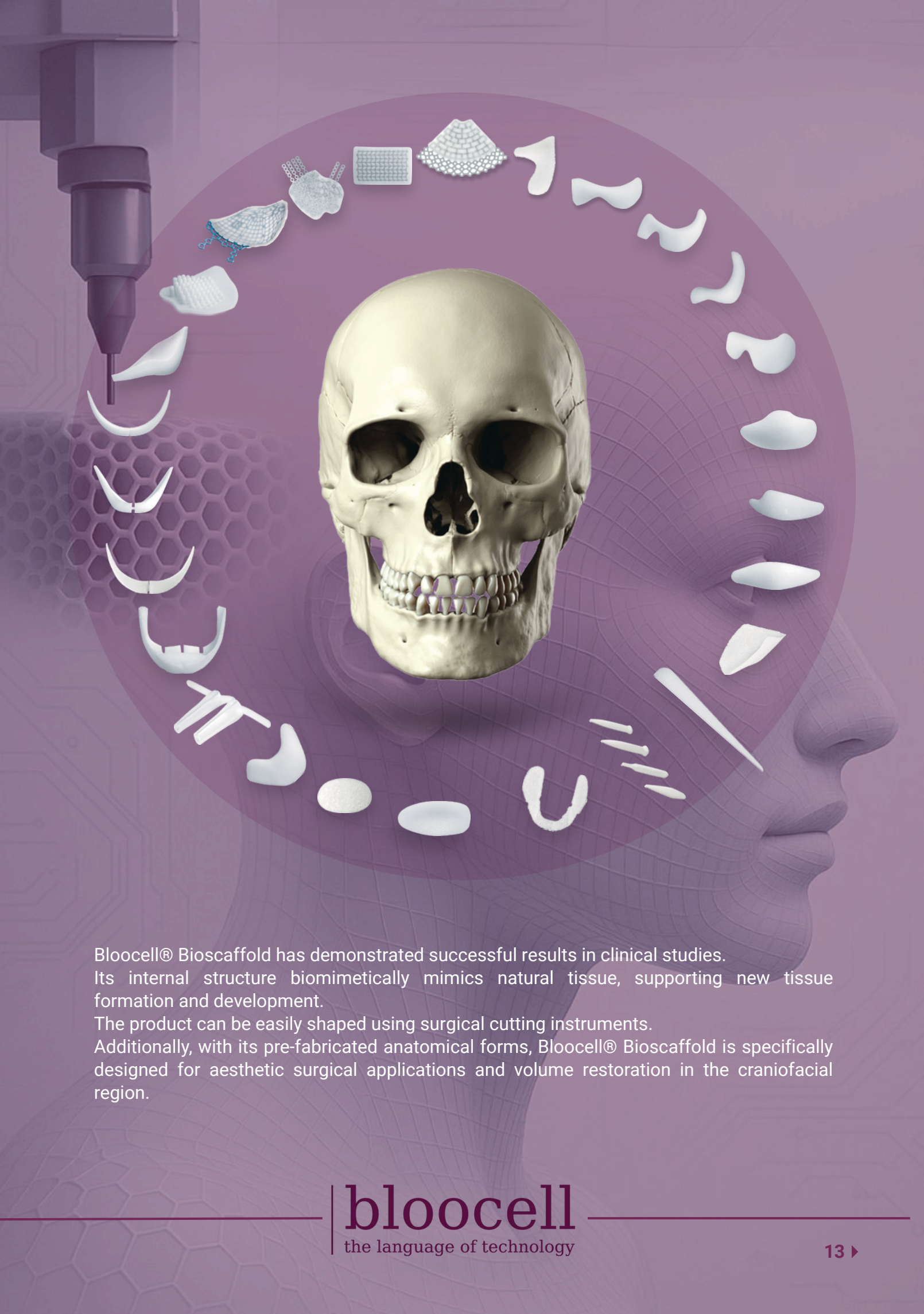
The pore size, shape, and required structural integrity of the architectural scaffold are designed to ensure strength, load-bearing capacity, and to provide an ideal microenvironment for cells and tissue ingrowth.



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

In such lesions, the biomimetic matrix structure supports cartilage regeneration by promoting remodeling of tissue in the subchondral region similar to the original hyaline cartilage.

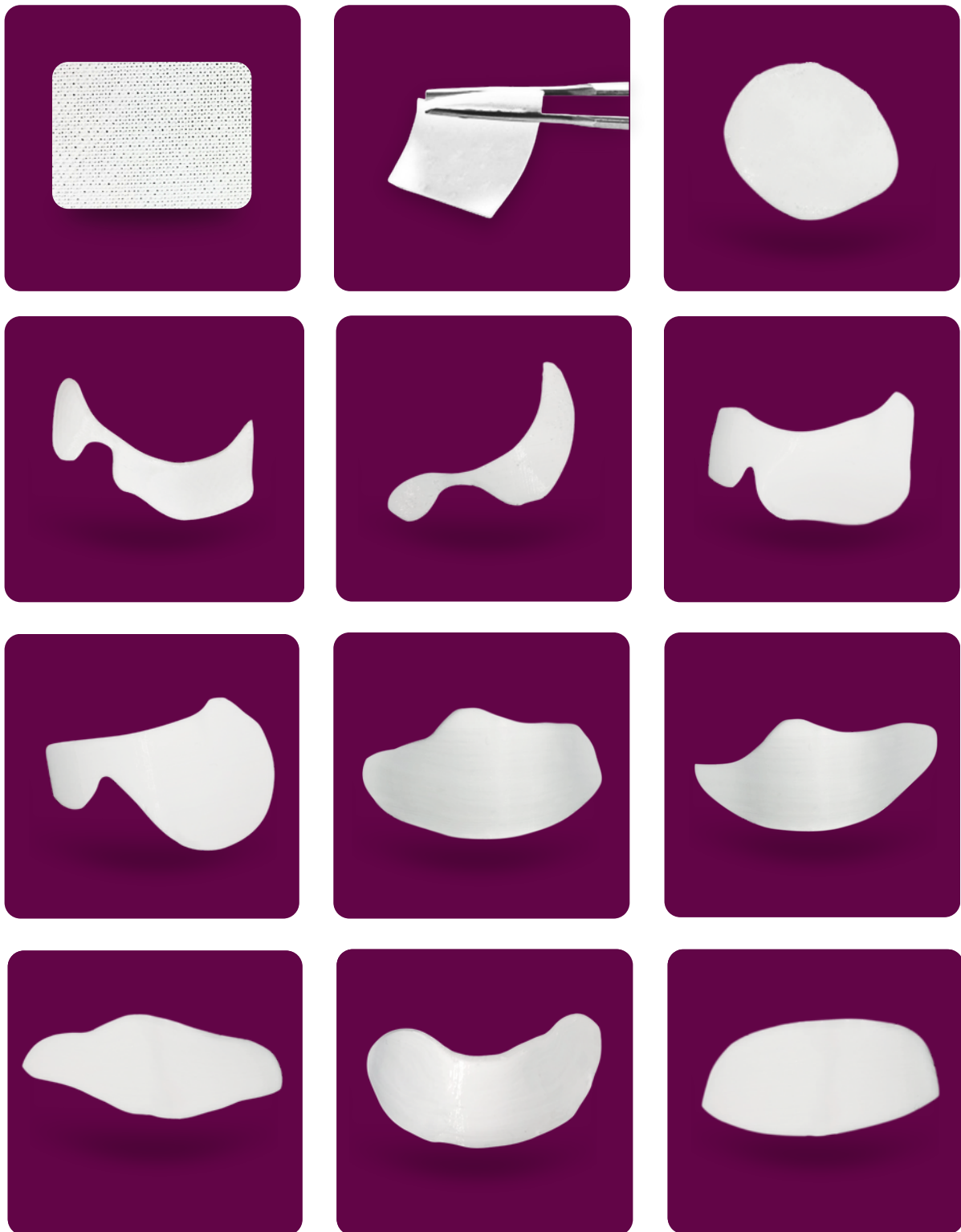
This approach helps avoid extensive joint reconstruction surgery, preserves anatomical tissue integrity, and allows repair of the joint/bone surface using minimally invasive surgical techniques.



Bloocell® Bioscaffold has demonstrated successful results in clinical studies. Its internal structure biomimetically mimics natural tissue, supporting new tissue formation and development. The product can be easily shaped using surgical cutting instruments. Additionally, with its pre-fabricated anatomical forms, Bloocell® Bioscaffold is specifically designed for aesthetic surgical applications and volume restoration in the craniofacial region.

PRODUCT CATALOG

BLOOCELL® BIOSCAFFOLD
NEXT-GENERATION BONE & TISSUE REGENERATION





Bloocell® Bioscaffold Sheets



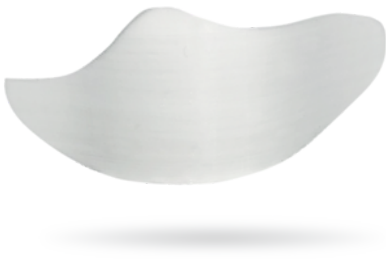
CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
52000	Bloocell® Bone Matrix Implant Synthetic	20	20	2

Bloocell® Extended Malar Shapes



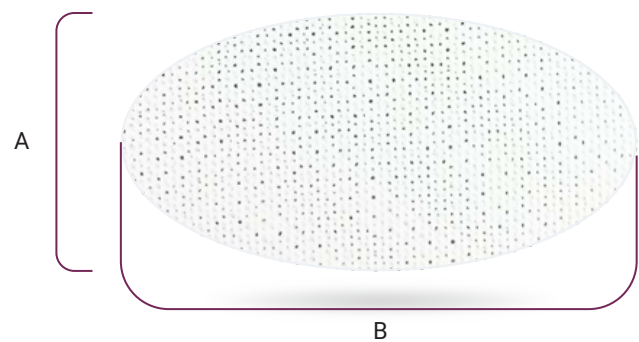
CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52302	Bloocell® Extended, small - left	45	24	3
52303	Bloocell® Extended, small - right	45	24	3
52304	Bloocell® Extended, medium - left	50	26	4
52305	Bloocell® Extended, medium - right	50	26	4
52306	Bloocell® Extended, large - left	55	27	5
52307	Bloocell® Extended, large - right	55	27	5

Bloocell® Rz Malar Implant



CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
52308	Bloocell® rz malar left	50	19	3
52309	Bloocell® rz malar right	50	19	3
52310	Bloocell® rz malar left	50	19	5
52311	Bloocell® rz malar right	50	19	5

Bloocell® SmartBla



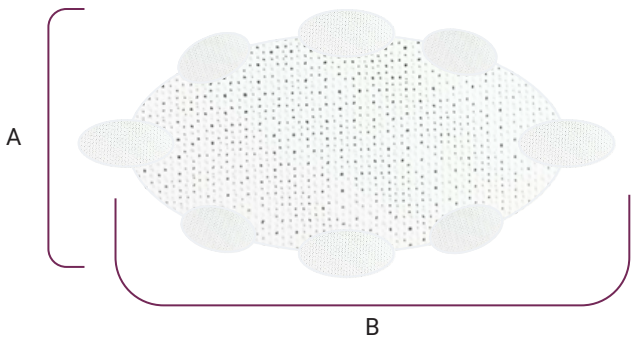
CATALOG NO	DESCRIPTION	A Cm	B Cm	THICKNESS mm
60014	Bloocell® Smartbla S	6	14	0.4mm
60015	Bloocell® Smartbla M	6	14	0.6mm
60016	Bloocell® Smartbla L	9	14	0.4mm
60017	Bloocell® Smartbla XL	9	14	0.6mm

Bloocell® SmartBla Nerve Guide



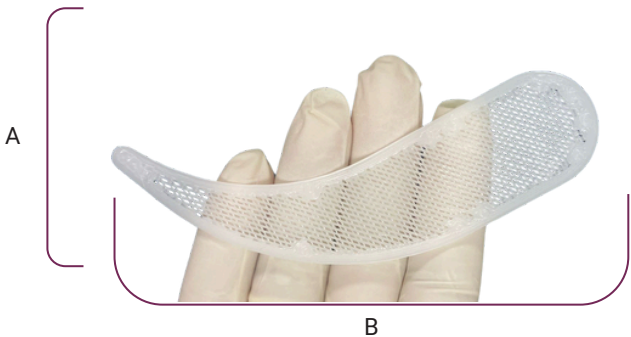
CATALOG NO	DESCRIPTION	A mm	THICKNESS mm
60014	Bloocell® Nerve Guide	30	1.5
60015	Bloocell® Nerve Guide	20	2
60016	Bloocell® Nerve Guide	20	3
60017	Bloocell® Nerve Guide	30	3
60018	Bloocell® Nerve Guide	20	4
60019	Bloocell® Nerve Guide	30	4
60020	Bloocell® Nerve Guide	20	5
60021	Bloocell® Nerve Guide	30	5
60022	Bloocell® Nerve Guide	20	6
60023	Bloocell® Nerve Guide	30	6
60024	Bloocell® Nerve Guide	20	7
60025	Bloocell® Nerve Guide	30	7

Bloocell® Tutopatch



CATALOG NO	DESCRIPTION	A Cm	B Cm	THICKNESS mm
60026	Bloocell® Tutopatch S	6	14	0.4
60027	Bloocell® Tutopatch M	6	14	0.6
60028	Bloocell® Tutopatch L	9	14	0.4
60029	Bloocell® Tutopatch XL	9	14	0.6

Bloocell® Midface



CATALOG NO	DESCRIPTION	A Cm	B Cm	THICKNESS mm
60030	Bloocell® Midface S	6	10	0.8
60031	Bloocell® Midface M	7	11	0.8
60032	Bloocell® Midface L	8	12	0.8
60033	Bloocell® Midface XL	9	13	0.8

Bloocell® Extended Orbital Implant



CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
52292	B-Extended orbital rim implants	47	40	6.30
52293	B-Extended orbital rim implants	47	40	6.30

Bloocell® Orbital Implant



CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
52294	B-Orbital Implant Left	40	40	8.45
52295	B-Orbital Implant Right	40	40	8.45

Bloocell® Midface Form Implant

CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52296	B-Midface Form Implant Left	60	40	4
52297	B-Midface Form Implant Right	60	40	4
52298	B-Midface Form Implant Left	65	41	4
52299	B-Midface Form Implant Right	65	41	4
52300	B-Midface Implant Left	47	28	3
52301	B-Midface Form Right	47	28	3



Bloocell® M Malar Implant



CATALOG NO	DESCRIPTION	A mm	B mm	C mm	D mm
52312	Bloocell® m malar left	64	19	3	15
52313	Bloocell® m malar right	64	19	3	15
52314	Bloocell® m malar left	64	19	4,5	17
52315	Bloocell® m malar right	64	19	4,5	17

Bloocell® Nasal Dorsal



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52316	Bloocell® Nasal Dorsal	43	22	16

Bloocell® Nasal Dorsum



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52326	Bloocell® Nasal Dorsum	4	4	45
52327	Bloocell® Nasal Dorsum	4	4	55
52328	Bloocell® Nasal Dorsum	5	5	45
52329	Bloocell® Nasal Dorsum	5	5	55
52330	Bloocell® Nasal Dorsum	9	6	55

Bloocell® Nasal Dorsum Mimic



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52331	Nasal	41	3.1	9
52332	Nasal Small	53	5	9
52333	Nasal Large	68	9	9
52334	Nasal S	67	6.4	9

Bloocell® Nasal And



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52335	Bloocell®Nasal AND	22	37	0,5

Bloocell® Nasal Sheet



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52336	Bloocell®Nasal Sheet	40	9	1,1

Bloocell® Nasal Valve



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52337	Bloocell® External Nasal Valve	25	11	0,85
52338	Bloocell® Extern 1 Nasal Valve	25	11	0,60

Bloocell® Lateral Nasal Valve



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52339	Bloocell® Lateral Nasal Valve	13	3,5	0,9

Bloocell® Paranasal



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52340	Bloocell® Paranasal left	28	26	4,5
52341	Bloocell® Panel right	28	26	4,5
52342	Bloocell® Paranasal left	30	28	7
52343	Bloocell® Paranasal right	30	28	7

Bloocell® Chin



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52367	Bloocell® Chin Small	40	25	4
52368	Bloocell® Chin Medium	47.5	37.5	5.5
52369	Bloocell® Chin Large	48.5	38	7

Bloocell® Moduler Chin



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52370	Mod Small	56	33	5
52371	Mod Medium	56	36	7
52372	Mod Large	57	38	9

Bloocell® Extended Chin



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52373	Bloocell® Extended chin small	45	47	3
52374	Bloocell® Extended chin medium	45	47	5
52375	Bloocell® Extended chin large	45	47	7
52376	Bloocell® Extended chin small	45	47	3
52377	Bloocell® Extended chin medium	45	47	5
52378	Bloocell® Extended chin large	45	47	7

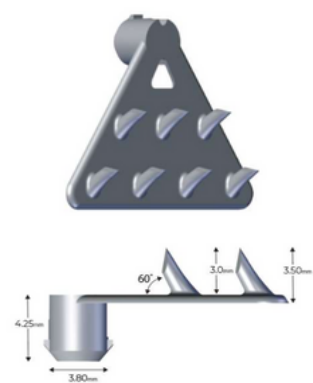
Bloocell® Two-piece Chin



CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52379	Bloocell® Two Piece Chin	72	42	3
52380	Bloocell® Two Piece Chin	74	42	5
52381	Bloocell® Two Piece Chin	78	50	7
52382	Bloocell® Two Piece Chin	80	55	9

BioChor

CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52379	BioChor	60	40	4
52380	BioChor	60	40	4
52381	BioChor	65	41	4
52382	BioChor	65	41	4
52383	BioChor	47	28	3
52384	BioChor	47	28	3



Bloocell® Mandibular Angle

CATALOG NO	DESCRIPTION	A mm	B mm	C mm	IP mm	LP mm
52383	Bloocell® Mandibular Angel Left-small	65	35	3		
52384	Bloocell® Mandibular Angel Right-small	65	35	3		
52385	Bloocell® Mandibular Angel Left- medium	65	35	7		
52386	Bloocell® Mandibular Angel Right- medium	65	35	7		
52387	Bloocell® Mandibular Angel Left-large	65	35	11		
52388	Bloocell® Mandibular Angel Right-large	65	35	11		
52389	Bloocell® Mandible Angle Left	47	38	3	3	6,5
52390	Bloocell® Mandible Angle Right	47	38	3	3	6,5



Bloocell® Flex Barrier

CATALOG NO	DESCRIPTION	A mm	B mm	C mm
52405	BFB Small Left	61	79	18
52406	BFB Small Right	61	79	18
52407	BFB Medium Left	74	93	20
52408	BFB Medium Right	74	93	20
52409	BFB Large Right	82	105	20
52410	BFB Large Left	82	105	20
52411	BFB Small	70	70	10
52412	BFB Medium	86	88	15
52413	BFB Large	95	98	18



Bloocell® Inferior Medial Orbital Implant

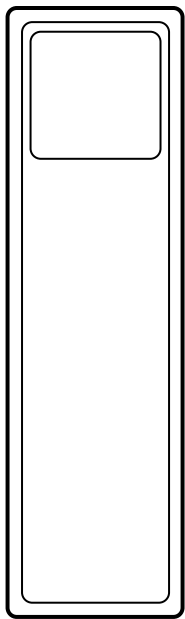
CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
52288	B-inferior Medial Orbital Left	25	26	2.50mm
52289	B-inferior Medial Orbital Right	25	26	2.50mm



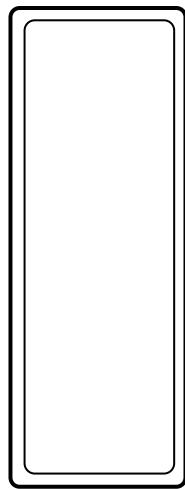
Bloocell® Inferior Orbital Implant

CATALOG NO	DESCRIPTION	A mm	B mm	THICKNESS mm
52290	B-Inferior Orbital Implant Left	43	18	3.2 mm
52291	B-Inferior Orbital Implant Right	43	18	3.2 mm

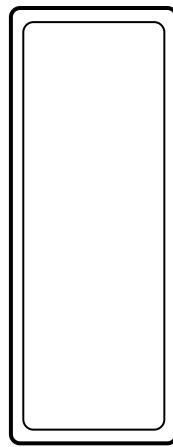




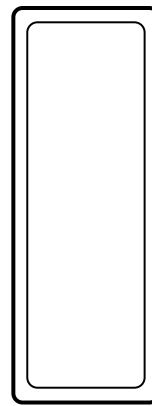
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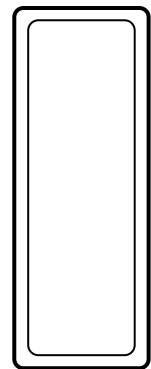
31x11



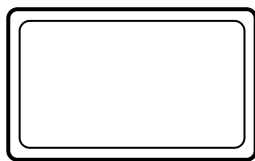
30x10



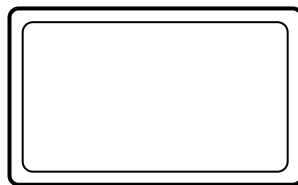
29x9



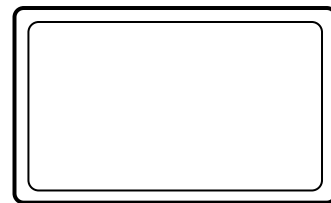
28x8



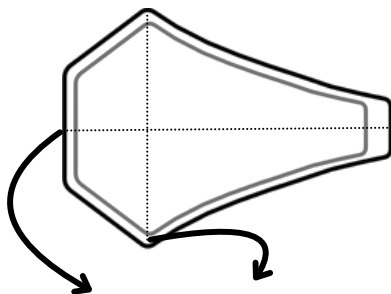
12x6



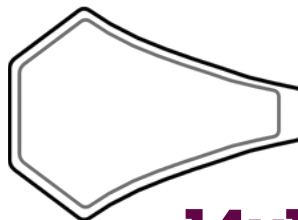
14x7



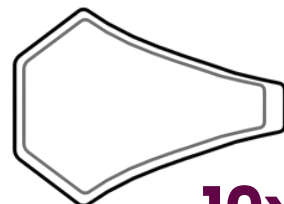
15x8



18x14



14x12



10x10

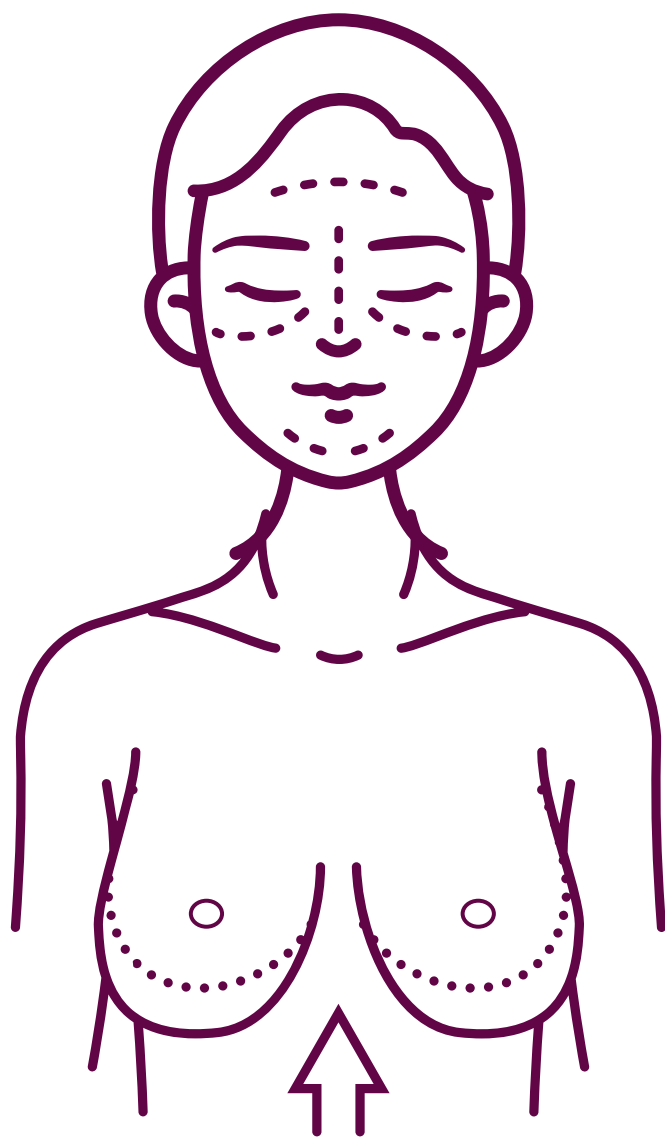
RHINOPLASTY KIT

Created by *Dr. Karaaltın*

bloocell

the language of technology

**Bloocell® Breast
Reconstruction**



CLINICAL STUDIES

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