



ELECTROSPUN SYNTHETIC SCAFFOLDS FOR ROTATOR CUFF REPAIR



AUTOBIOLOGIC™ SCAFFOLDS: POWERING THE HEALING RESPONSE

THE BIOLOGIC CHALLENGE

Poor healing at the tendon–suture interface is a key contributor to rotator cuff repair failure, with sutures prone to cutting through weakened tendon tissue under load, reflected in an average retear rate of approximately 35%.¹

REDEFINING THE MICROENVIRONMENT

BioCharge[®] is a bioresorbable matrix placed on the bursal side of the rotator cuff designed to:

- Reduce implantation time with a staple-free, integrated delivery system
- Reinforce compromised tissue and help deter suture cut-through
- Supercharge the biologic healing response

DESIGNED AS A SCAFFOLD FOR THE SUTURE-TENDON INTERFACE

100% Synthetic Composition

- PGA: Polyglycolic acid
- PLCL: Poly(lactide-co-caprolactone)
- 85% porous structure

Integrated Suture Tunnel

- Pre-loaded with snare
- Fast deployment & fixation-free

Bioresorbable

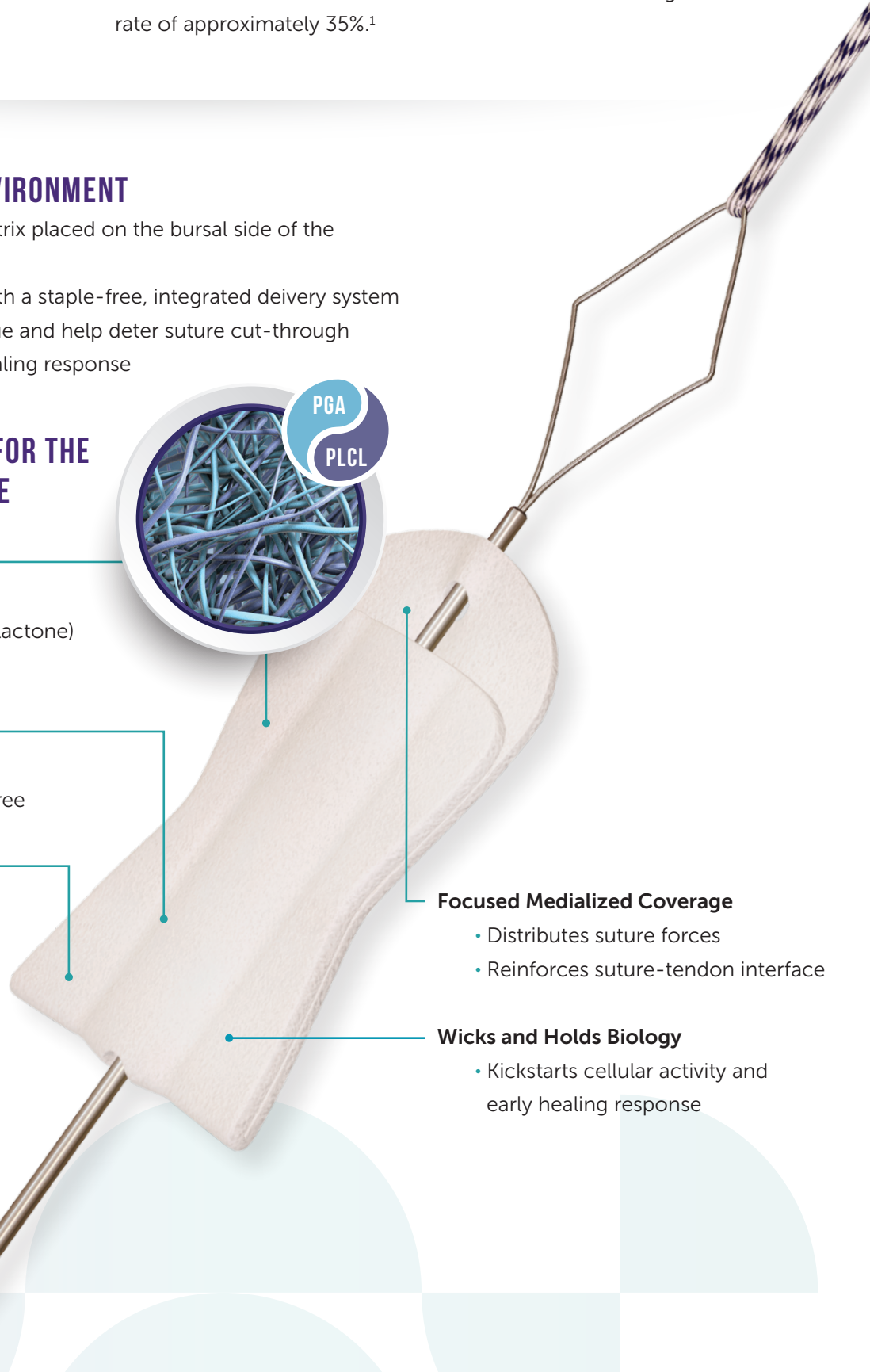
- Resorption: 4-6 months
- Thickness: 1.7mm

Focused Medialized Coverage

- Distributes suture forces
- Reinforces suture-tendon interface

Wicks and Holds Biology

- Kickstarts cellular activity and early healing response

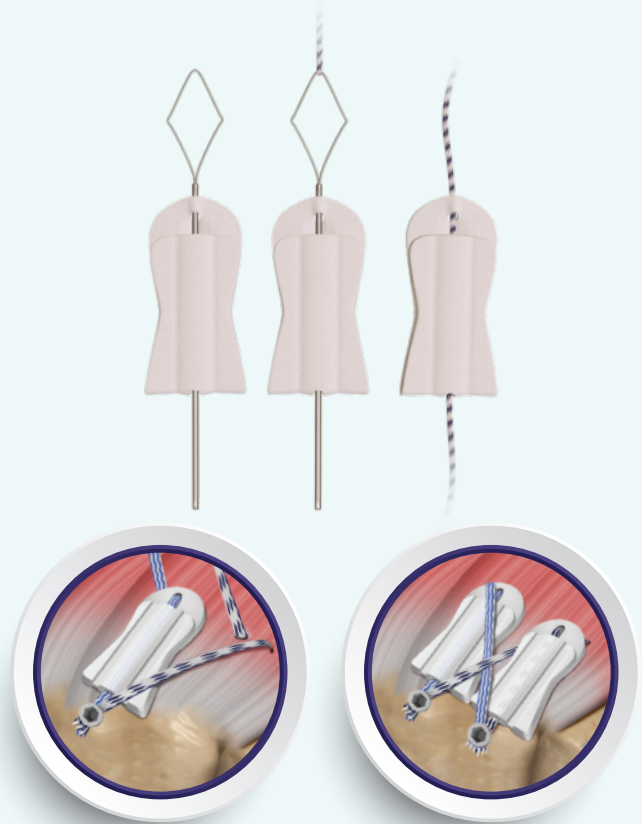


EFFICIENT TECHNIQUE

1 Load one suture from a medial row anchor into the snare and pull it through the BioCharge suture tunnel

2 Slide BioCharge along the suture, down the cannula, and position on cuff. Retrieve desired sutures and deploy the first lateral row anchor

3 Select from the remaining sutures to load through the next BioCharge implant. Repeat step 2 to deploy the second lateral row anchor & finalize repair



DATA DRIVEN TECHNOLOGY

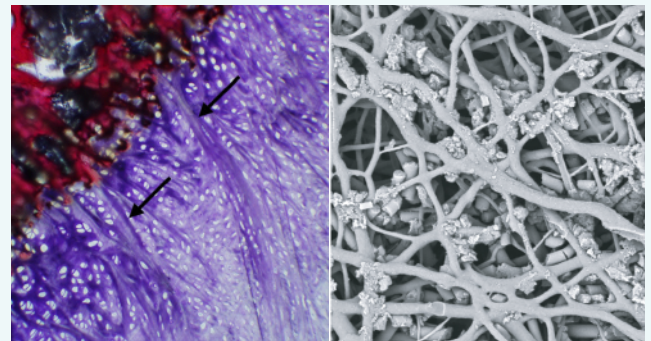
LEFT: Acute RCR Model, Sheep CSU Study (JSES, 2022)⁴
Gradual scaffold degradation supports healing by enabling new tissue formation over time.

RIGHT: **Autobiologic™** action of scaffold showing proliferation of human tenocytes into ROTIUM® nanofiber scaffold after four weeks.⁵



Winner of the 2023 Neviasser Award for Basic Science (ASES & JSES)

MIMICS NATIVE ECM



ROTIUM and BioCharge are made from the same polymers and follow the same mechanism of action designed to promote healing through cellular proliferation and integration.

VITAL ROLE OF BIOACTIVE DEGRADANTS

Biphasic resorption of PGA and PLCL releases bioactive degradants that modulate the local environment, fuel cellular activity, and promote tendon healing and tissue remodeling:

Glycolic Acid^{6,7,9}

- Modulates inflammation
- Promotes fibroblast proliferation & collagen expression

Lactic Acid^{8,10}

- Stimulates VEGF expression & enhances cellular migration
- Promotes angiogenesis & ECM deposition

Caproic Acid⁷

- Addresses microbial contaminants
- Modulates inflammation

SURGEON-DRIVEN ADVANTAGES

Efficient

- Streamlined, single-step deployment

Smart Economics

- No additional fixation or disposables required

Biocompatible

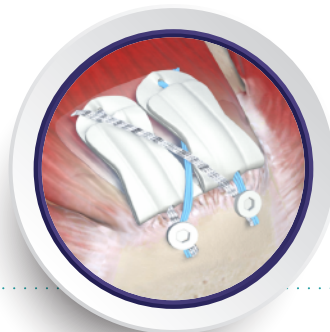
- No human or animal components

Arthroscopic image courtesy of Dr. Dragomir Mijic¹¹



BioStack Option

- Only company with a solution for both sides of the repair (onlay + interpositional) using ROTIUM & BioCharge



Animated image of BioStack

ORDERING INFORMATION

PART #	DESCRIPTION	QTY
BC-2012	BioCharge® Autobiologic Matrix Implant Single Pack (2cm x 1.2cm)	1
FG-0007	ROTIUM® Bioresorbable Wick Implant (2cm x 2cm)	1
FG-0043	ROTIUM® Bioresorbable Wick Implant (4cm x 3cm)	1

FDA 510(k) Clearance: **BioCharge®** is intended to be used in conjunction with suture anchors for the reattachment of tendon to bone in rotator cuff repairs.

No special storage requirements. Recommended storage in original packaging, preferably in a cool and dry place.

CONTACT YOUR ATREON REPRESENTATIVE FOR MORE INFORMATION OR VISIT

atreonortho.com/contact-us/



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⊠ All claims supported by data on file.

* Please refer to the IFU for a complete list of compatible anchors.

§ References available upon request

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View U.S. patent information at <https://nanofibersolutions.com/technology>



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