

## SALES SUMMARY TIGR® Matrix

**STRONG WHEN YOU NEED IT GONE WHEN YOU DON'T**

**The use of a novel synthetic resorbable scaffold (TIGR® Matrix) in a clinical quality improvement (CQI) effort for abdominal wall reconstruction (AWR)**

*Lewis, R., Forman, B., Preston, M., Heidel, E., Alvoid-Preston, B., Ramshaw, B.*

	TIGR® Matrix	Phasix™		Strattice™
	36 months	18 months <sup>1</sup>	36 months <sup>2</sup>	24 months <sup>3</sup>
<b>Seroma</b>	3%	6%	6%	29%
<b>Infection</b>	10%	9%	9%	38%
<b>Recurrence</b>	12%	9%	15.7 %	28%

**Inclusion:**

91 patients with average BMI of 34. Recurrent hernia in 52 patients with average number of recurrences 3.4. Active wound infection in 21 patients (27%).

**Results:**

36 months follow-up time on all patients, average follow-up 42 months. Using TAR technique further decreases the recurrence rate (4.5%) and wound infection (4.5%).

<sup>1</sup> Roth JS, et.al.; Surg Endosc. 32, 1929-1936, 2018

<sup>2</sup> Roth JS, et.al.; Presented at SAGES 2019 (Baltimore, MD), 2019

<sup>3</sup> Itani KMF, et.al.; Surgery 152, 498-505, 2012

## **TIGR<sup>®</sup>**matrix

### **Dynamic Reconstruction with TIGR<sup>®</sup> Matrix**

the World's first long-term Resorbable Surgical Mesh

TIGR<sup>®</sup> Matrix is designed with "ease of use" in mind without compromising on important features such as mechanical strength over time, risk for late infection or other complications leading to unnecessary pain for the patient or increased hospital cost.

In the critical initial wound healing phase, TIGR<sup>®</sup> Matrix contributes with high strength and helps stabilize the wound. During the next phase the matrix gradually increases its extensibility and pliability as the load is transferred to the tissue, thus stimulating the new tissue to remodel into functional connective tissue.

### **FEATURES**

- Long-term resorbable mesh
- Strong
- Pliable and easy to cut
- 100% Synthetic
- Cost effective
- Multifilament for superior handling characteristic and tissue integration
- Multistage mechanics are achieved by arranging two fibers with different degradation characteristics in an interlocking knitting pattern
- Strength and stability of the mesh is high in the initial wound-healing phases (closure and granulation)
- Macroporosity throughout the mesh allows for good integration during granulation
- As the granulation phase transitions into the reconstruction phase, the extensibility of the mesh gradually increases

- Increased mesh extension when tissue stretch during reconstruction stimulates the remodelling of tissue
- The result of this dynamic reconstruction is a more structured, and hence stronger, connective tissue

## ABSORPTION TIME

**BIO-A®** consists of Polyglycolic acid and trimethylene carbonate and is resorbed within 6-7 months. Gore Medical (2020). Gore Bio-A tissue reinforcement.  
<http://www.goremedical.com/products/bioatissue>

**Phasix®** consists of poly-4-hydroxybutyrate (P4HB) and is resorbed within 12 months. Bard BD (2020) Phasix mesh. <https://www.crbard.com/Davol/en-US/products/Phasix-Mesh>

**TIGR® Matrix** consists of a fast-degrading copolymer between glycolide and trimethylene carbonate and a slow degrading copolymer between lactic and trimethylene carbonate. The fast-degrading copolymer is absorbed by 4 months, whereas the slow-degrading copolymer loses strength after 6-9 months and is completely resorbed at 3 years.

[https://novusscientific.com/row/wp-content/uploads/sites/3/2021/02/PF-lowRes\\_450005-01\\_TIGR-Matrix\\_Brochure\\_AWR\\_RoW\\_Eng-2.pdf](https://novusscientific.com/row/wp-content/uploads/sites/3/2021/02/PF-lowRes_450005-01_TIGR-Matrix_Brochure_AWR_RoW_Eng-2.pdf)

## THE DIFFERENCE IN MECHANICAL STRENGTH

***Using synthetic resorbable meshes** like BIO-A®, Phasix™ or TIGR® Matrix that will fully degrade and be removed from the implant area after a definite period opposed to inert meshes will avoid chronic events like encapsulation and mesh shrinkage which in some cases may lead to meshoma and severe pain for the patients. Compared to biologics which do degrade over a relative short period of time, Phasix™ and TIGR® Matrix do offer mechanical strength up to and beyond 6 months after implantation compared to most biologics where mechanics are lost after 1 to 2 months. This knowledge should be put into perspective regarding wound strength which usually require at least 3 months to regain 80% of its initial strength.*

**“BIO-A®** is not really a mesh, it is more like a thin scaffold made up by short fibers to form a continuous scaffold with micropores. The main constituent of the scaffold is glycolide which degrades rapidly. The mechanics of BIO-A® will decline rapidly only 3 weeks after implantation to be gone after some 5 weeks. This degradation profile will in most cases be too rapid seen in the light that most wounds will need 3 months to regain about 80 % of its original strength. Due to its design and thickness, about 1.5 mm, tissue integration will be very slow as compared to open porous knitted design as found in Phasix™ and TIGR® Matrix. Mesh integration is very important to facilitate early anchoring of the mesh so that it can contribute to the overall wound stability during the first wound healing period and help avoid micro ruptures which in longer term may lead to recurrence.” /Torbjörn Mathisen, PhD, Novus Scientific researcher and polymer expert

**“PHASIX™** - Initial mechanical strength of Phasix™ and TIGR® Matrix is equal, however Phasix™ is much stiffer due to its monofilament structure. Phasix™ have a pronounced memory and will snap back after release upon bending while TIGR® Matrix will adapt well to the underlying tissue. TIGR® Matrix is made from untwisted multifilament which is the reason for the pliability in the mesh. Mesh made from multifilament has historically been perceived as something that will enhance the risk for infection, however, in TIGR® Matrix this has shown not to be true due to the untwisted nature of the fibers that rapidly absorb blood via capillary forces and later allow for tissue to grow in between the individual fibers. This allows our immune system to fight potential bacterial infestation.” /Torbjörn Mathisen, PhD, Novus Scientific researcher and polymer expert

Both Phasix™ and TIGR® Matrix have good long-term mechanical strength up to and beyond 6 months. The strength profile of Phasix™ is gradually decreasing over time while in TIGR® Matrix which is built from two different materials, there will be a gradual decline in mechanical strength over the period from 8 to 28 days after implantation. This decline was designed into TIGR® Matrix to allow for a gradual increase in the mesh extensibility. Early change in extensibility will allow for the new tissue to start sense the load situation and thereby also start the remodeling of early deposited new tissue. This remodeling process (removal of old collagen and deposition of new collagen) allows for the wound to grow stronger over time. Although some of the initial mechanical strengths have been lost during the first

28 days, about 50% of the initial mechanical strength is left and will stay at this level up to 4–6 months after implantation when again it slowly start to decline.

10 years of clinical evidence use has shown TIGR® Matrix to be safe and effective in various clinical indications such as ventral hernia and complex abdominal wall reconstructions. Also, the risk of infection has been documented to be at the same level or lower than monofilament meshes.