Partner Spotlight

Creating a customized collagen patch for shoulder soft tissue augmentation

Therapeutic area

- **Motion Preservation & Sports Medicine**

Product

- **Medical grade collagen**

Capabilities

- **Biomaterials expertise**
- **Market insight**
- **Custom prototyping and sampling**
- **R&D support**

Partnering for the challenge

A global company headquartered in the United States, our partner is a significant player in orthopedics and sports medicine seeking to strengthen their shoulder portfolio with a customized collagen patch for rotator cuff soft tissue augmentation. Our challenge was educating and guiding our partner through a market-informed, material selection process.

Why it matters

Every year in the United States, surgeons perform more than 250,000 rotator cuff repair procedures. Typically, suture anchors secure torn tendons to the humeral head.

Yet, "Poor biological healing is still problematic, with failure of tendon-bone fixation occurring in up to 26% of small to medium tears and up to 94% in large and massive tears."[1] Further, the retear rates for rotator cuff range from 7.2% to 94%.[2] Increasingly, rotator cuff repairs are supplemented with a variety of reinforcing scaffolds during orthopedic surgeries.

Our innovation

The Biomedical team at dsm-firmenich collaborated with our partner to:

- Create a cohesive list of potential solutions based on extracellular matrix (ECM), collagen, and synthetic offerings.
- Align market trends and demand data with a scientific approach to evaluate biomaterial options that meet specific partner requirements.
- Generate customized samples and prototypes using lab-based data, partner specifications, and clinical strategy.
- Provide data-based support, technical advice, and biomaterial guidance, including product and regulatory guidance, lab testing results for composition, equivalency data, and more.

Our impact

Our partner is assured that the customized collagen solution for shoulder repairs provided by the Biomedical division of dsm-firmenich will help to meet the market demand and solve clinical challenges from existing devices, such as the failure of tendon-bone fixation and high retear rates. Furthermore, this collaboration is likely to contribute to future innovations for their new generation of biocomposite suture anchors.

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References: 1. Thangarajah T, Pendegrass CJ, Shahbazi S, Lambert S, Alexander S, Blunn GW. Augmentation of rotator cuff repair with soft tissue scaffolds. *Orthop J Sports Med.* 2015;3(6):2325967115587495. doi:10.1177/2325967115587495 **2.** Park JY, Lee JH, Oh KS, et al. Rotator cuff retear after repair surgery: comparison between experienced and inexperienced surgeons. *Clin Shoulder Elb.* 2021;24(3):135-140. doi:10.5397/cise.2021.00073

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