

# ArthroFlex® Dermal Allograft

## ECM Competitor Reference Chart

	Product	Marketer	Material	Processing	Sterilization/ Decellularization	Shelf Life	Handling	Strengths	Weaknesses/ General Information
Allografts	ArthroFlex Dermal Allograft	Arthrex, Inc.	Human dermis	Matracell® decellularization technology	Low-temperature, low-dose irradiation	3 years	<ul style="list-style-type: none"> <li>Hydrated</li> <li>Room temperature storage</li> </ul>	<ul style="list-style-type: none"> <li>Sterile</li> <li>Quick preparation time</li> <li>Suture retention strength<sup>1</sup></li> <li>Room temperature storage</li> <li>Retains key proteins: collagen, elastin, proteoglycans<sup>2</sup></li> <li>Decellularized to remove &gt;97% DNA</li> <li>Ready to use</li> <li>Extensive scientific data to support use</li> <li>Multiple sizes available</li> </ul>	<ul style="list-style-type: none"> <li>Cost</li> <li>Lack of Level 1 studies</li> </ul>
	GRAFTJACKET Now™ Regenerative Tissue Matrix	Wright Medical Technology, Inc.	Human dermis	DermaTrue™ decellularization process*	E-beam sterilization	2 years	<ul style="list-style-type: none"> <li>Room temperature storage</li> <li>Stored in sterile water</li> </ul>	<ul style="list-style-type: none"> <li>Sterile, via e-beam technology<sup>3</sup></li> <li>Strong</li> <li>Intact collagen scaffold</li> <li>Decent portfolio of sizes and thicknesses</li> </ul>	<ul style="list-style-type: none"> <li>No clinical data with new process, zero data on use in Superior Capsular Reconstruction (SCR)</li> <li>Storage in sterile water may damage collagen<sup>4</sup></li> <li>DNA removal is not quantified and therefore may cause an immune response<sup>5</sup></li> <li>Private label of AlloSource AlloMend® dermis</li> </ul>
	AlloPatch HD® Acellular Human Dermis	MTF Biologics/ ConMed Linvatec	Human dermis	Aseptic	None/aseptic	Not specified	<ul style="list-style-type: none"> <li>Hydrated in OR</li> <li>Room temperature storage</li> </ul>	<ul style="list-style-type: none"> <li>Maintains natural biomechanical, biochemical, and matrix properties</li> <li>Stronger than synthetics and xenografts</li> <li>Marked for orientation</li> <li>Decent portfolio of sizes and thicknesses</li> </ul>	<ul style="list-style-type: none"> <li>Freeze-dried without damage to the matrix components</li> <li>Has a prehydrated offering</li> <li>Portfolio includes multiple sizes and thicknesses</li> </ul>

\*DermaTrue is a trademark of AlloSource



	Product	Marketer	Material	Processing	Sterilization/ Decellularization	Shelf Life	Handling	Strengths	Weaknesses/ General Information
Allografts	Matrix HD® Allograft Dermis	RTI Surgical	Human dermis	Tutoplast® tissue sterilization process; does not make any mention of tissue decellularization	SAL 10 <sup>-6</sup> via low-dose gamma irradiation	5 years	Solvent dehydration with acetone followed by vacuum extraction	<ul style="list-style-type: none"> <li>• Sterile</li> <li>• On-the-shelf storage</li> <li>• 30+ years of use</li> <li>• Viral inactivation</li> <li>• Ultra-thick graft availability</li> </ul>	<ul style="list-style-type: none"> <li>• Limited published data</li> <li>• The Tutoplast process uses sodium hydroxide, which completely eliminates growth factors from the matrix and decreases mechanical properties of extracellular matrix (ECM)<sup>3</sup></li> <li>• Tutoplast uses acetone, which damages ECM and warrants “conservative use, especially for biologic scaffolds used in load-bearing clinical applications. In comparison to detergent treatments, acetone crosslinks ECM to produce stiffer scaffolds with mechanical properties further removed from those of native tissue.”<sup>5</sup></li> <li>• Residual DNA may illicit immune response<sup>5</sup></li> </ul>
	DERMIS ON DEMAND™ Allograft	DePuy Synthes	Human dermis	Open Dermal Matrix™ Technology	SAL 10 <sup>-6</sup>	5 years	<ul style="list-style-type: none"> <li>• Freeze-dried</li> <li>• Implanted dry</li> </ul>	<ul style="list-style-type: none"> <li>• 30-second augmentation</li> <li>• Cost</li> </ul>	<ul style="list-style-type: none"> <li>• No DNA removal claim</li> <li>• Cost is estimated to be the same as ArthroFlex BioWasher® graft</li> </ul>
	AlloMend® Acellular Dermal Matrix	Pacific Medical, Inc.	Human dermis	DermaTrue™ decellularization process	E-beam technology	2 years	Stored in sterile water	<ul style="list-style-type: none"> <li>• Comes ready-to-use</li> <li>• Sterilization method avoids damage to tissue marked for orientation</li> <li>• Decent portfolio of sizes and thicknesses</li> </ul>	<ul style="list-style-type: none"> <li>• Limited published data</li> <li>• DNA removal is not quantified and therefore may cause an immune response<sup>5</sup></li> <li>• Storage in sterile water may damage collagen<sup>4</sup></li> </ul>
	DermaSpan™ Acellular Dermal Matrix	Zimmer Biomet	Human dermis	Proprietary	Acellular but not quantified	Not available	Room temperature	<ul style="list-style-type: none"> <li>• Freeze-dried without damage to the matrix components</li> <li>• Has a prehydrated offering</li> <li>• Good portfolio of sizes and thicknesses</li> </ul>	<ul style="list-style-type: none"> <li>• Limited published data</li> <li>• DNA removal is not quantified and therefore may cause an immune response<sup>5</sup></li> <li>• Unknown processing conditions and prehydration</li> <li>• Majority of graft sizes are freeze-dried and require lengthy hydration times of 30 to 60 minutes depending on thickness</li> </ul>

	Product	Marketer	Material	Processing	Sterilization/ Decellularization	Shelf Life	Handling	Strengths	Weaknesses/ General Information
Synthetic Materials	X-Repair Technology	Synthosome	Woven mesh of poly-L lactic acid	Unknown	N/A	Unknown	Unknown	Mechanical strength	<ul style="list-style-type: none"> <li>No cellular component which means less augmentation opportunity</li> <li>X-Repair is not intended to replace normal body structure or provide the full mechanical strength to support the rotator cuff, patellar, Achilles, biceps, or quadriceps tendons</li> <li>Will slowly degrade in the body over 12 to 24 months, maintaining approximately 90% of its strength at 12 months</li> <li>Cannot be cut</li> </ul>
Xenografts	Regeneten™ Bioinductive Implant	Smith and Nephew	Type 1 bovine collagen	Proprietary	Residual DNA of <50 ng/mg	Unknown	Room temperature	<ul style="list-style-type: none"> <li>Ethylene oxide (ETO) sterilization</li> <li>Comes with implantation assistance device</li> <li>Robust marketing</li> </ul>	<ul style="list-style-type: none"> <li>Bovine sensitivity and/or reaction can occur</li> <li>Minimal tensile strength</li> <li>Cost</li> <li>Not indicated to replace damaged tendon or reinforce the strength of any tendon repair</li> <li>Published data does not include control groups</li> <li>Five times more residual DNA than ArthroFlex dermal allograft<sup>6</sup></li> </ul>
	Tenomend™ Collagen Tendon Wrap	Exactech	Type 1 collagen matrix	Unknown	Unknown	Unknown	Room temperature	<ul style="list-style-type: none"> <li>Patented self-curling design</li> <li>Provides protective environment and gliding surface</li> </ul>	<ul style="list-style-type: none"> <li>Only one size</li> <li>Requires hydration</li> <li>Manufacturer also makes Regeneten implant</li> </ul>
	TissueMend® Soft Tissue Repair Matrix	Stryker	Fetal bovine dermis	Proprietary	ETO sterilization (SAL 10 <sup>-6</sup> )	3 years	Room temperature	<ul style="list-style-type: none"> <li>Sterile</li> <li>Convenient storage</li> </ul>	<ul style="list-style-type: none"> <li>Requires rehydration</li> <li>Freeze-drying process may alter collagen and decrease GAGs<sup>7</sup></li> <li>Limited published data</li> <li>Only available in 1 mm thickness</li> </ul>

## References

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