CardioGRAFT-MC[™] Pulmonary Artery Patch

Experience the Difference



The Ideal Patch for Ideal Outcomes.

LifeNet Health is the world's most trusted provider of transplant solutions.

Every year, we deliver more than 400,000 allograft bio-implants, and have distributed tens of thousands of cardiac and vascular implants since 1986.

The Ideal Patch

CardioGRAFT-MC is a pulmonary artery patch bio-implant created from donated human tissue and decellularized using LifeNet Health's validated, patented process, **MatrACELL**[®]. Our process renders the tissue acellular without compromising the biomechanical or biohospitable properties of the tissue, ensuring that the native scaffold is preserved.

Our MatrACELL tissue decellularization process:

- · Removes \geq 99% of RNA/DNA cells
- · Maintains the strength of the native scaffold
- · Results in a patch that is compliant with the native tissue
- · Not pro-inflammatory¹

The result of published peer-reviewed clinical studies: ^{1,2}

- · NO stenosis
- · NO dilation
- · NO aneurysm formation
- · NO calcification
- · NO patch-related reoperations

This makes CardioGRAFT-MC the ideal patch for your pediatric patients.

- The latest clinical study shows no patch-related reoperations due to calcification or aneurysm formation during the first two years of an ongoing five-year study.²
- No patch related adverse events have occurred since the patch was introduced in 2009, a unique record among other allograft patches on the market.³

"When I perform re-operations, the CardioGRAFT with MatrACELL (CardioGRAFT-MC) looks and feels very similar to the adjacent native tissue."

– Joseph Forbess, M.D., Director, Cardiothoracic Surgery, Dallas, TX



Donor tissue decellularized using our patented MatrACELL technology



Biopsied CardioGRAFT-MC patch nearly 6 months postimplant



Excellent Durability, Easy Handling

In the operating room, you need a patch that works for your patient, and for you.

Our CardioGRAFT–MC bio-implants balance ease-ofhandling with durability, helping make your job a little easier and allowing you to focus on what matters most: your patient.

CardioGRAFT-MC possesses the characteristics surgeons most desire, including:

- Handles like native pulmonary artery tissue, because it is human pulmonary artery tissue
- · Excellent suturability and handling
- Easily conforms to patient anatomy
- · Incorporates well with native tissue
- Not pro-inflammatory

"A decellularized pulmonary homograft has theoretic grounds and now early clinical evidence to suggest that it is an advance for materials science."

Invited Commentary, The Annals of Thoracic Surgery, Volume 97, Issue 4, April 2014, pages 1412-1413.

Surgeons who have used the CardioGRAFT-MC report that it is more forgiving and compliant than alternative biologic patches they have used.

Blinded national survey of pediatric cardiac surgeons, 2014.

Avoiding Unnecessary Interventions

No parent wants their child to undergo more surgeries than necessary.

- More than 100 patients have shown no need for patchrelated interventions, replacements or re-operations two years into an ongoing five-year study.²
- The cost savings associated with the most common patch-related re-operations is estimated at \$28,000 to \$89,000 per case, based on national cost and reimbursement averages.²
- Initial Pediatric Cardiac Experience With Decellularized Allograft Patches, Lofland GK, O'Brien JE Jr., Gandy KL, Dennis PA, Marshall JA, Mastbergen RK, Hopkins RA, The Annals of Thoracic Surgery, 2012;93:968-71.
- 2 Pulmonary Aterioplasty with Decellurlarized Allogeneic Patches, Hopkins RA, Loftland GK, Marshall J, The Annals of Thoracic Surgery, Volume 97, Issue 4, April 2014, Pages 1407–1412
- 3 Data on file at LifeNet Health
- 4 Musculoskeletal Clinical Regulatory Advisors economic study, 2014.



Clinically Proven Durability and Safety

Our MatrACELL decellularization process safely and effectively removes donor cells and DNA without sacrificing native biomechanical strength and durability.

Our proprietary MatrACELL decellularization process:

- \cdot Maintains the biomechanical strength of the native collagen and elastin scaffold.
- · Demonstrates \geq 99% reduction in donor DNA benefiting your patients who may require future transplantation.
- · Produces a safe bio-implant by employing multiple disinfecting agents, targeting all aspects of bacterial growth.
- \cdot Is free of any animal-derived reagents.

CardioGRAFT-MC™ Pulmonary Artery Patch			
Decellularized Pulmonary Patch Graft	Size	Product Code	Frozen
Thin (Branch)	W = 2.5 - 5.0 cm; L = 3.0 - 8.0 cm	DPPGN	
Thick (Trunk)	W = 2.5 - 5.0 cm; L = 3.0 - 8.0 cm	DPPGK	
Decellularized Hemi Pulmonary Artery	Size	Product Code	Frozen
Right	Multiple options, varies by donor	DRHPA	
Left	Multiple options, varies by donor	DLHPA	



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