

What is claimed is:

1. A method of regenerating an atrioventricular (AV) valve to replace a defective AV valve within a heart of a subject, the defective AV valve being attached at an annular region between an atrium and a ventricle within the heart of the subject and being coupled to a plurality of papillary muscles within the ventricle of the heart of the subject, the method comprising:
 - removing the defective AV valve from the heart of the subject; and
 - implanting an extracellular matrix (ECM) material conduit, the ECM material conduit defining a lumen and having an inlet portion and an outlet portion, wherein the inlet portion of the ECM material conduit is secured to the annular region and the outlet portion of the ECM material conduit is secured to at least two papillary muscles of the plurality of papillary muscles.
2. The method of Claim 1, wherein the ECM material conduit comprises at least one tissue, each tissue of the at least one tissue being from a respective tissue source, wherein the tissue source of each tissue of the at least one tissue is selected from the group consisting of small intestinal submucosa, stomach submucosa, large intestinal tissue, urinary bladder submucosa, liver basement membrane, pericardium, epicardium, endocardium, myocardium, lung tissue, kidney tissue, pancreatic tissue, prostate tissue, mesothelial tissue, fetal tissue, a placenta, a ureter, veins, arteries, heart valves with or without their attached vessels, tissue surrounding the roots of developing teeth, and tissue surrounding growing bone.
3. The method of Claim 2, wherein the ECM material conduit is sterile and acellular.
4. The method of Claim 1, wherein the inlet portion and the outlet portion of the ECM material conduit have respective outer circumferences, and wherein the outer circumference of the outlet portion is substantially equal to the outer circumference of the inlet portion.
5. The method of Claim 1, wherein the inlet portion and the outlet portion of the ECM material conduit have respective outer circumferences, and wherein the outer circumference of the outlet portion is greater than the outer circumference of the inlet portion.
6. The method of Claim 1, wherein the inlet portion and the outlet portion of the ECM material conduit have respective outer circumferences, and wherein the outer circumference of the outlet portion is less than the outer circumference of the inlet portion.

7. The method of Claim 1, wherein the step of implanting the ECM material conduit comprises securing the outlet portion of the ECM material conduit to only a first papillary muscle and a second papillary muscle within the ventricle of the heart of the subject, and wherein the replacement AV valve regenerated by the ECM material conduit is a bi-cuspid valve.
8. The method of Claim 7, wherein the defective AV valve is a tri-cuspid valve.
9. The method of Claim 8, wherein the first papillary muscle is the anterior papillary muscle of the right ventricle of the heart of the subject, and wherein the second papillary muscle is the posterior papillary muscle of the right ventricle of the heart of the subject.
10. The method of Claim 8, wherein the first papillary muscle is the anterior papillary muscle of the right ventricle of the heart of the subject, and wherein the second papillary muscle is the septal papillary muscle of the right ventricle of the heart of the subject.
11. The method of Claim 8, wherein the first papillary muscle is the posterior papillary muscle of the right ventricle of the heart of the subject, and wherein the second papillary muscle is the septal papillary muscle of the right ventricle of the heart of the subject.
12. The method of Claim 7, wherein the defective AV valve is a bi-cuspid (mitral) valve.
13. The method of Claim 7, wherein the outlet portion of the ECM material conduit has an outer circumference, wherein the outlet portion of the ECM material conduit is secured thereto the first papillary muscle at a first attachment point and secured thereto the second papillary muscle at a second attachment point, the second attachment point being spaced from the first attachment point along the outer circumference of the outlet portion of the ECM material conduit.
14. The method of Claim 13, wherein the lumen defined by the ECM material conduit has a center point proximate the outlet portion of the ECM material conduit, and wherein the center point of the lumen corresponds to a vertex of an angle formed between the first attachment point and the second attachment point.
15. The method of Claim 14, wherein the angle formed between the first attachment point and the second attachment point has a magnitude ranging from about 120° to about 150°.
16. The method of Claim 1, wherein the defective AV valve is a tri-cuspid valve, wherein the step of implanting the ECM material conduit comprises securing the outlet portion of the ECM material conduit to a first papillary muscle, a second papillary muscle, and a third

~~papillary muscle within the ventricle of the heart of the subject, and wherein the replacement AV valve regenerated by the ECM material conduit is a tri-cuspid valve.~~

~~17. The method of Claim 1, wherein the ECM material conduit has a longitudinal length, a first end, and an opposed second end, the method further comprising, prior to the step of implanting the ECM material conduit, inverting the first end of the ECM material conduit into the lumen of the ECM material conduit along at least a portion of the longitudinal length of the ECM material conduit toward the second end of the ECM material conduit, thereby forming a multi-layer ECM material conduit.~~

~~18. The method of Claim 1, wherein the ECM material conduit has a longitudinal length, a first end, and an opposed second end, the method further comprising, prior to the step of implanting the ECM material conduit, everting the first end of the ECM material conduit over itself along at least a portion of the longitudinal length of the ECM material conduit toward the second end of the ECM material conduit, thereby forming a multi-laminate ECM material conduit.~~

~~19. The method of Claim 1, wherein the step of removing the defective AV valve from the heart of the subject comprises removing at least a portion of the chordae tendineae attached to the defective AV valve.~~

~~20. The method of Claim 1, wherein the outlet portion of the ECM material conduit comprises a plurality of extension portions, and wherein each papillary muscle of the at least two papillary muscles is secured to a respective extension portion of the plurality of extension portions.~~

~~21. An ECM material valve conduit for regenerating an atrioventricular (AV) valve to replace a defective AV valve within a heart of a subject, the defective AV valve being attached at to an annular region between an atrium and a ventricle within the heart of the subject and being coupled to a plurality of papillary muscles within the ventricle of the heart of the subject, the ECM material conduit heart, the defective AV valve and annular region of the heart comprising first cardiovascular tissue, the defective AV valve further comprising a first plurality of valve leaflets, comprising:~~

a bioabsorbable tubular conduit member comprising sterile, acellular small intestine submucosa (SIS), said SIS comprising less than 4% DNA content and a dry weight bFGF content of at least 140 pg/mg of said SIS, said SIS further exhibiting at least 96% decellurization and a tensile strength of at least 9 N,

said ECM conduit member defining a lumen and having an inlet portion and an outlet portion, the said inlet portion of the said ECM material conduit member being configured for attachment to the attach to an said annular region of the heart of the subject, wherein at least a portion of the ECM material conduit has a multi-laminate structure, wherein the said heart of said subject, said outlet portion of the of the said ECM material conduit comprises member being configured to attach to papillary muscles within said subject's heart,

said ECM conduit member being configured to induce generation of a plurality of extension portions, and wherein each extension portion of the regenerated valve leaflets in said ECM conduit member lumen when said ECM conduit member is coupled to said first cardiovascular tissue of said annular region,

said plurality of extension portions is configured for attachment to a respective papillary muscle of the at least two papillary muscles regenerated valve leaflets comprising second cardiovascular tissue, said second cardiovascular tissue and said first cardiovascular tissue being similar, said plurality of regenerated valve leaflets being configured to function in a manner similar to said first valve leaflets of said defective AV valve.

22. — ~~The ECM material conduit of Claim 21, wherein the ECM material conduit is sterile and acellular.~~

232. ~~The ECM material valve conduit of Claim 21 1, wherein the said inlet portion and the said outlet portion of the said ECM material conduit have respective outer circumferences, and wherein the said outer circumference of the said outlet portion is substantially equal to the said outer circumference of the said inlet portion.~~

24. — ~~The ECM material conduit of Claim 21, wherein the inlet portion and the outlet portion of the ECM material conduit have respective outer circumferences, and wherein~~

~~the outer circumference of the outlet portion is greater than the outer circumference of the inlet portion.~~

~~25. The ECM material conduit of Claim 21, wherein the inlet portion and the outlet portion of the ECM material conduit have respective outer circumferences, and wherein the outer circumference of the outlet portion is less than the outer circumference of the inlet portion.~~

~~263. The ECM material valve conduit of Claim 21 1, wherein the plurality of extension portions comprises said outlet portion of said ECM conduit member includes a first extension portion and a second extension portion, the first extension portion and the second extension being secured to the ECM material conduit at respective extension points, wherein the lumen defined by the ECM material conduit has a center point proximate the outlet portion of the ECM material conduit, and wherein the center point of the lumen corresponds to a vertex of an angle formed between the extension points of the first and second extension portions.~~

~~274. The ECM material valve conduit of Claim 26 3, wherein the angle formed between the said first and second extension points of the second extension portions has a magnitude ranging from about are spaced at 0° and 120° to about 150°, respectively, on said ECM conduit member outlet portion.~~

~~5. The ECM valve conduit of Claim 3, wherein said first and second extension portions are spaced at 0° and 150°, respectively, on said ECM conduit member outer portion.~~

~~286. The ECM material valve conduit of Claim 21 5, wherein at least a portion of the said ECM material conduit has comprises a multi-layer-laminate structure.~~

~~29. The ECM material conduit of Claim 28, wherein the multi-layer structure comprises a multi-laminate structure.~~