Tubular scaffold for fabrication of heart valves

Tech ID: 25204 / UC Case 2013-552-0

BRIEF DESCRIPTION

Existing replacements for heart valves have drawbacks that limit its long-term usage. Researchers at UC Irvine have developed a tubular scaffold for heart valve fabrication for a long-lasting and stable heart valve.

FULL DESCRIPTION

Treatment of valvular heart disease involves valve replacement. Current heart valve replacements are limited to mechanical or bio-prosthetic heart valves. One major drawback of mechanical heart valves is the need for patients to take anti-coagulants. While prosthetic heart valves do not require the patient to take anti-coagulants, they do not last very long, thereby requiring patients to again undergo invasive surgery for heart valve replacement.

Here, researchers at UC Irvine have developed a method to form heart valves by using a valvular scaffold. The valvular scaffold is composed of a tubular braided metal mesh shaped with leaflet structures. Leaflet formation is simple: pinching/pressing the tubular braided scaffold and then heat treating ormation of leaflet shape. The braided tubular mesh can be used to support cell growth, resulting in a biologically active valvular tissue construct.

SUGGESTED USES

This invention can be used to make biocompatible heart valve constructs.

ADVANTAGES

The braided tubular mesh scaffold allows for structural durability of the resulting valve construct. Fabrication process is simple, thereby allowing different types of valves to be made.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,968,446	05/15/2018	2013-552

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OTHER INFORMATION

CATEGORIZED AS

» **Materials & Chemicals**
» Biological
» **Medical**
» Devices
» Disease: Cardiovascular and Circulatory System

RELATED CASES

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