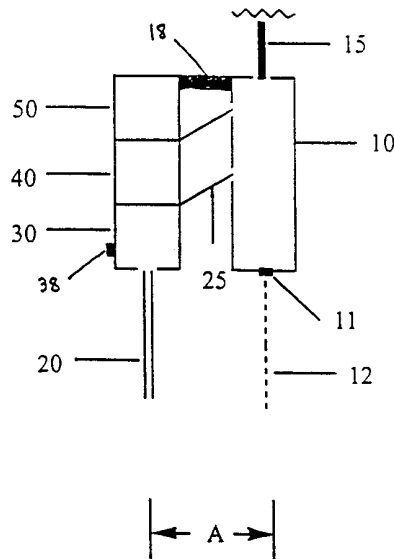




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(54) Title: REVASCULARIZATION APPARATUS HAVING COAXIAL CHANNELING AND INJECTING MEANS



(57) Abstract

The invention provides an apparatus, and kit for enhancing injury induced revascularization of tissue as treatment of a disease, such as coronary artery disease. The apparatus comprises a device for creating injury in a tissue (10) by making a channel in the tissue, in combination with an injection device (20) for injecting the tissue with a re-vascularization promoting molecule (e.g., a protein, such as pro-angiogenic factor, vascular endothelial growth factor, fibroblast growth factor, etc), or a nucleic acid molecule encoding such a molecule. The device for creating injury may be a laser, an ultrasonic device, or a thermal probe.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/06616

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : A61B 17/22
US CL : 604/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 604/22, 30, 65-67, 114-5; 606/11, 12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,109,859 A (JENKINS) 05 May 1992, Abstract, figures, claims, and col. 5, lines 37-50.	1-3, 6-13, 17-21 ----- 14-16, 22-26
X --- Y	US 5,628,761 A (RIZIK) 13 May 1997, claims, figures, Abstract, and col. 7, lines 9-26.	1-3, 6-10, 12, - 13, 17-21 ----- 14-16
X, P	US 5,925,012 A (MURPHY-CHUTORIAN et al.) 20 July 1999, Abstract, figures, and claims.	1-27

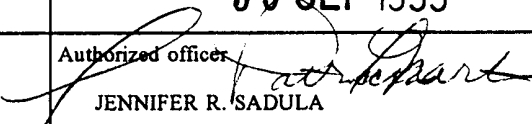
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Date of the actual completion of the international search
18 AUGUST 1999

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International application No.
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 5,846,225 A (ROSENGART et al.) 08 December 1998, Abstract, figures, and claims.	1-27
X --- Y	US 5,683,366 A (EGGERS et al.) 04 November 1997, Abstract, figures, claims, and col. 2, lines 49-67.	1-13, 17-22 ----- 14-16, 23-27
X --- Y	US 5,672,170 A (CHO et al.) 30 September 1997, Abstract, figures, claims and col. 1, lines 25-45.	1-4, 6-13, 17-22 ----- 5, 14-16

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/06616

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

APS

Search Terms: revascularization, cannula or syringe or inject? (W) means, nucleic(W) acid