Title: THE USE OF LOW-POWER LASER IRRADIATION FOR ENHANCED VASCULARIZATION OF TISSUE AND TISSUE-ENGINEERED CONSTRUCT TRANSPLANTS

Abstract: The success of tissue transplantation, when immunological conflict is minimized, depends on the vascularization process. This process is very complex and requires time. During this time, transplanted tissue often has difficulty obtaining oxygen and nutrients. These factors have a profound influence on the survival of the transplanted tissue, especially if the tissue has poor angiogenic properties. For new vessel formation, endothelial cells from existing recipient microvessels must proliferate and migrate through the extracellular matrix into the transplanted tissue. However, if transplanted tissue is irradiated with low-power laser, vascularization and acceptance of auto-, allo-, and heterotransplants is enhanced.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61B 18/18; A61F 2/06, 2/24; A61M 1/10
US CL : 606/16; 623/1, 2, 3, 4, 5

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. : 606/16; 623/1, 2, 3, 4, 5

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)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tbody>
<tr>
<td>X</td>
<td>US 5,290,272 A (BURSTEIN et al.) 01 March 1994 (01.03.1994), col. 11- col.14.</td>
<td>1, 2, 4-6</td>
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<td>Y</td>
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<td>X</td>
<td>US 4,676,790 A (KERN) 30 June 1987 (30.06.1987), claims 1-3.</td>
<td>1-2, 4-6</td>
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<td>A</td>
<td>WO 01/13810 A1 (MIRACLE MEDICAL/SURGICAL TECHNOLOGIES INC.) 01 March 2001 (01.03.2001). See entire reference.</td>
<td>1-9</td>
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Date of the actual completion of the international search

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231
Facsimile No. (703) 305-3230

Date of mailing of the international search
02 MAY 2003

Authorized officer

Telephone No. (703) 308-0196

Form PCT/ISA/210 (second sheet) (July 1998)
Continuation of B. FIELDS SEARCHED Item 3:
JPODB, EPODB, DERWENT, USPDB, USPGPUBS

laser, suture, weld?, tissue, transplant?, islet, allogenic, autologous, heterogenic, engineer?