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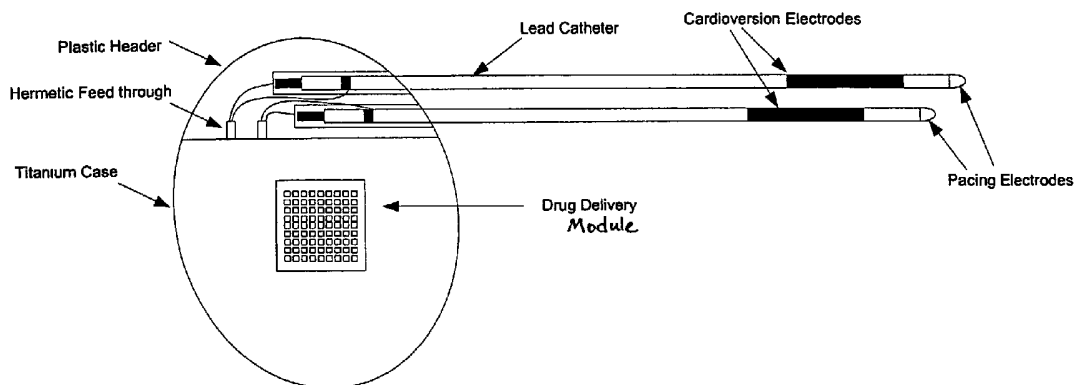
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For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: MEDICAL DEVICE FOR CONTROLLED DRUG DELIVERY AND CARDIAC MONITORING AND/OR STIMU-
LATION



(57) Abstract: Medical device and methods are provided for controlled drug delivery in a cardiac patient. The device includes an implantable drug delivery module comprising reservoirs containing a drug and a control means for selectively releasing an effective amount of drug from each reservoir; one or more electrodes or sensors for cardiac monitoring, stimulation, or both; and a microcontroller for controlling operational interaction of the drug delivery module and the cardiac electrode. The electrodes may comprise ECG monitoring, cardioversion, or cardiac pacing electrodes. A medical device also is provided for controlled delivery of drug to a patient having congestive heart failure, which includes an implantable drug delivery module comprising a natriuretic peptide and a release mechanism for selectively releasing a pharmaceutically effective amount of the natriuretic peptide into the patient; and a microcontroller for controlling the release mechanism, for example, in response to one or more monitored patient parameters.

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INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61N1/39 A61N1/362 A61K9/00

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)

IPC 7 A61N A61K A61B

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	WO 02/30264 A (MICROCHIPS INC) 18 April 2002 (2002-04-18) page 3, paragraph 3 page 5, paragraph 5 -page 6, paragraph 2 page 6, paragraph 5 -page 7, paragraph 1 page 9, paragraph 5 -page 10, paragraph 2 page 12, paragraph 3 --- -/--	1, 2, 19, 23-25, 29-31, 33, 34 32

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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- *Z* document member of the same patent family

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INTERNATIONAL SEARCH REPORT

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	US 5 156 148 A (COHEN TODD J) 20 October 1992 (1992-10-20)	1-4, 6-10,13, 14, 17-19, 21-25, 29,33-35 5,16,20
Y	column 1, line 33-40 column 6 column 6, line 20 -column 8, line 67 column 9, line 31-63 column 10, line 20-50 figures ---	
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INTERNATIONAL SEARCH REPORT

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.
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 03/31596

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 44-53
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Methods for treatment of the human or animal body by therapy and surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-35

Medical device comprising: an implantable drug delivery module; one or more electrodes for cardiac monitoring and/or stimulation; and at least one microcontroller for controlling operational interaction of the drug delivery module and the cardiac electrode.

2. Claims: 36-43

Medical device comprising: an implantable drug delivery module comprising a drug formulation which comprises a natriuretic peptide, and a release mechanism; and at least one microcontroller for controlling the release mechanism.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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International Application No

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