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(54) Title: DEVICE AND METHODS FOR MONITORING THE ADMINISTRATION OF A STEM CELL TRANSPLANT

(57) Abstract: A device and methods for the real-time monitoring of stem cells in a stem cell transplant. The device comprises a linear member and particle detection device configured to occupy the lumen of a catheter while the catheter is in place to administer a stem cell transplant to a delivery site in the body of a patient. Monitoring of the stem cells permits the device to provide signals to a computer processor for the determination of one or more characteristics of stem cells in the stem cell transplant.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/027326**A. CLASSIFICATION OF SUBJECT MATTER***A61M 5/168(2006.01)i, A61M 25/01(2006.01)i, A61M 25/16(2006.01)i, C12M 1/34(2006.01)i, G06F 19/00(2011.01)i*

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)

A61M 5/168; A61N 1/18; C12N 5/00; A61M 25/00; A61B 18/20; A61B 18/18

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: catheter, stem cell,optic, monitor, laser, administration

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | US 2008-0125634 A1 (RYAN et al.) 29 May 2008 See the abstract; claims 1-6 and 19; paragraphs [0062],[0064]-[0065], and [0094]; and figs.1 and 2A. | 1-10, 25-30 |
| A | US 2005-0228452 A1 (MOURLAS et al.) 13 October 2005 See the abstract; claims 1-4; paragraphs [0002],[0009],[0028], and [0041]-[0043]; and figs.1-4. | 1-10, 25-30 |
| A | US 2006-0122584 A1 (BOMMANNAN et al.) 08 June 2006 See the abstract; claims 1-9; paragraphs [0032]-[0035] and [0041]; and figs.2, 3A-3B, and 7. | 1-10, 25-30 |
| A | US 2003-0129750 A1 (SCHWARTZ) 10 July 2003 See the abstract; claims 1, 7-10, and 14-16; paragraphs [0002],[0016],[0026],[0139]-[0141], and [0158]; and figs.6A-6B. | 1-10, 25-30 |

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2011/027326**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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.: 11-24
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 11-24 pertain to methods for treatment of human by therapy, as well as diagnostic methods, and thus relate to a subject matter which this international Searching Authority is not required to search under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT.
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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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INTERNATIONAL SEARCH REPORT

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International application No.

PCT/US2011/027326

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