

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 July 2009 (30.07.2009)

PCT

(10) International Publication Number
WO 2009/094554 A3

- (51) International Patent Classification: A61N 7/00 (2006.01) A61B 18/18 (2006.01) [US/US]; 4801 Starak Lane, Ann Arbor, Michigan 48105 (US).
- (21) International Application Number: PCT/US2009/031857
- (22) International Filing Date: 23 January 2009 (23.01.2009)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 61/023,554 25 January 2008 (25.01.2008) US; 12/121,001 15 May 2008 (15.05.2008) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: HISTOTRIPSY FOR THROMBOLYSIS

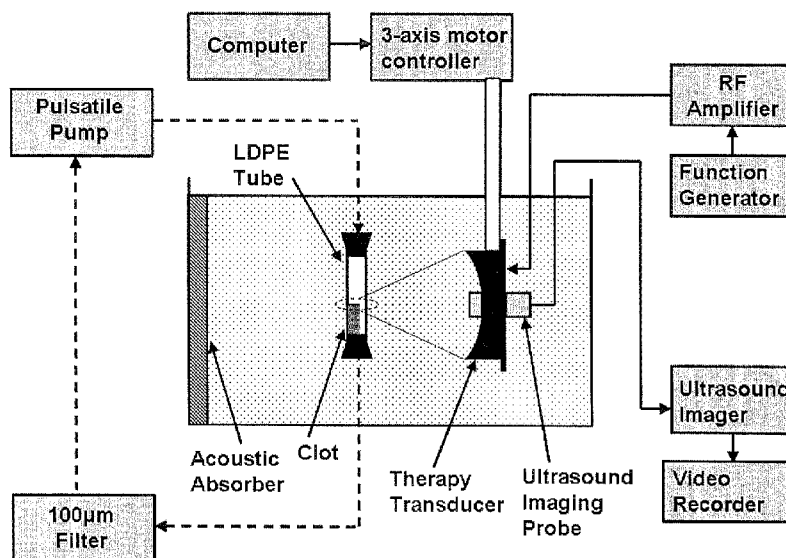


FIG. 1

(57) Abstract: Methods for performing non-invasive thrombolysis with ultrasound using, in some embodiments, one or more ultrasound transducers to focus or place a high intensity ultrasound beam onto a blood clot (thrombus) or other vascular inclusion or occlusion (e.g., clot in the dialysis graft, deep vein thrombosis, superficial vein thrombosis, arterial embolus, bypass graft thrombosis or embolization, pulmonary embolus) which would be ablated (eroded, mechanically fractionated, liquefied, or dissolved) by ultrasound energy. The process can employ one or more mechanisms, such as of cavitation, sonochemical, mechanical fractionation, or thermal processes depending on the acoustic parameters selected. This general process, including the examples of application set forth herein, is henceforth referred to as 'Thrombolysis.'



WO 2009/094554 A3



Published:



(88) Date of publication of the international search report:

15 October 2009

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/031857

A. CLASSIFICATION OF SUBJECT MATTER		
<i>A61N 7/00(2006.01)i, A61B 18/18(2006.01)i</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) IPC A61N		
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 since 1975		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKOMPASS(KIPO internal)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2007-0083120 A1 (Charles A. Cain et al.) 12.04.2007 See Claims 1-17 and Figures 1-22.	1,20
Y	US 2004-0138563 A1 (Mark A. Moehring, Arne H. Voie, Merrill P. Spencer) 15.07.2004 See Claims 1-8 and Page 4.	1,20
Y	US 2003-0157025 A1 (Evan C. Unger, Yunqiu Wu) 21.08.2003 See Abstract and Figure 1.	1,20
A	US 2002-0045890 A1 (The Regents of the university o f California) 18.04.2002 See Abstract.	1,20
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified) "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 26 AUGUST 2009 (26.08.2009)		Date of mailing of the international search report 28 AUGUST 2009 (28.08.2009)
Name and mailing address of the ISA/KR  Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140		Authorized officer Noh, Young Chul Telephone No. 82-42-481-5617 

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/031857**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.: 2-19, 21
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 2-19 and 21 pertain to methods for treatment of the human body by therapy, and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
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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