(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 25 July 2002 (25.07.2002)

PCT

(10) International Publication Number WO 02/056666 A3

(51) International Patent Classification7: A61B 8/00

(74) Agent: ABC-PATENT, SIVILING. ROLF CHR. B. LARSEN A.S; Brynsvn. 5, N-0667 Oslo (NO).

(21) International Application Number: PCT/NO01/00022

(81) Designated State (national): DE.

(22) International Filing Date: 22 January 2001 (22.01.2001)

(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

(25) Filing Language: English

Published:

(26) Publication Language: English

with international search report

ning of each regular issue of the PCT Gazette.

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

27 February 2003

(30) Priority Data: 09/766,328

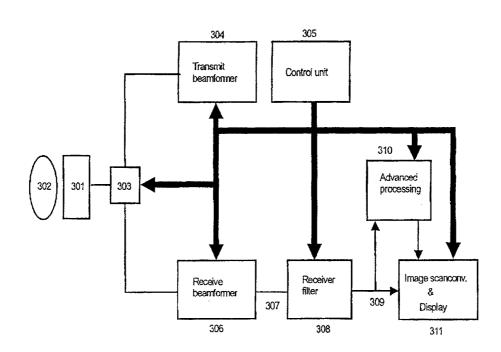
US 19 January 2001 (19.01.2001)

> For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the begin-

(71) Applicant and

(72) Inventor: ANGELSEN, Bjørn, A., J. [NO/NO]; Bugges veg 4B, N-7051 Trondheim (NO).

(54) Title: A METHOD OF DETECTING ULTRASOUND CONTRAST AGENT IN SOFT TISSUE, AND QUANTITATING BLOOD PERFUSION THROUGH REGIONS OF TISSUE



(57) Abstract: The present invention is directed to a method for detecting an ultrasound contrast agent in a soft tissue and quantitating blood perfusion through regions of tissue by detecting the contrast agent in the tissue.

WO 02/056666 A3

International application No.

PCT/NO 01/00022

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A61B 8/00
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)

IPC7: A61B, B06B

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)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	EP 0948931 A2 (GENERAL ELECTRIC COMPANY), 13 October 1999 (13.10.99), column 3, line 24 - column 9, line 12	1
Υ		3,10,17-23
	· · · · · · · · · · · · · · · · · · ·	
Y	EP 0770352 A1 (ADVANCED TECHNOLOGY LABORATORIES, INC.), 2 May 1997 (02.05.97), column 11, line 43 - column 14, line 3, figure 14	3,17,19-22
:		
Y	US 5957852 A (JOHN A. HOSSACK ET AL), 28 Sept 1999 (28.09.99), column 2, line 7 - column 5, line 67; column 8, line 8 - column 10, line 4	17-20,23

			·
X	Further documents are listed in the continuation of Box	C.	X See patent family annex.
* "A" "E" "L"	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance earlier application or patent but published on or after the international filing date document which may throw doubts on priority claim(s) or which is	"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 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
"O" "P"	cited to establish the publication date of another citation or other special reason (as specified) document referring to an oral disclosure, use, exhibition or other means document published prior to the international filing date but later than the priority date claimed	"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
Dat	e of the actual completion of the international search	Date	of mailing of the international search report
24	Sept 2002		28. 11. 2002
Nam	ne and mailing address of the International Searching Authority European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Во	Gustavsson/mj

In ional application No.
PCT/NO 01/00022

C (Continu	ation). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
Y	US 5410205 A (TURUVEKERE R. GURURAJA), 25 April 1995 (25.04.95), column 3, line 1 - column 6, line 10	10
A		1,8,9,11,12, 14,15
	and team	
A	EP 0451984 A2 (KABUSHIKI KAISHA TOSHIBA), 16 October 1991 (16.10.91), see the whole document	1,8-16
A	US 5724976 A (YOSHITAKA MINE ET AL), 10 March 1998 (10.03.98), see the whole document	1,8-16
A	WO 9847533 A1 (NYCOMED IMAGING A.S.), 29 October 1998 (29.10.98), see the whole document	1,17-23
I		·
!		
:		
	·	
		,

Internauonal application No. PCT/NO01/00022

Box I	Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This inter	rnational search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1.	Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
	see next sheet
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.:
, L	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 Inte	rnational 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.
	No protest accompanied the payment of additional search fees.

Interr____al application No. PCT/NO01/00022

Claims 1-23 relate to diagnostic and surgical methods practised on the human body. The methods are used to detect the presence of contrast agents in a tissue in order to assess blood perfusion of tissues, which is of diagnostic value, and includes a step of administering a contrast agent by infusion or injection, which is a surgical step. Thus, the International Searching Authority is not required to carry out an international search for these claims (PCT Rule 39.1(iv)). Nevertheless, an International Search has been executed for claims 1-23.

Form PCT/ISA/210 (extra sheet) (July1998)

International application No.
PCT/NO 01/00022

						<u>. </u>	
	nt document search report		Publication date		Patent family member(s)		Publication date
EP	0948931	A2	13/10/99	JP US US	11342129 5980459 6108572	Α	14/12/99 09/11/99 22/08/00
EP	0770352	A1	02/05/97	JP US US US US US	9164138 5706819 5951478 6315729 2002040189 2002055681	A A B A	24/06/97 13/01/98 14/09/99 13/11/01 04/04/02 09/05/02
US	5957852	Α	28/09/99	NONE			
US	5410205	A	25/04/95	DE JP	9401033 6261395		17/03/94 16/09/94
EP	0451984	A2	16/10/91	DE JP JP US	69109923 3015481 4211600 5163436	B A	16/11/95 06/03/00 03/08/92 17/11/92
US	5724976	A	10/03/98	DE JP JP	19548988 8187245 8182680	A	11/07/96 23/07/96 16/07/96
WO	9847533	A1	29/10/98	AU EP GB JP NO US	7219098 0977594 9708246 2001523997 995148 6315730	A D T A	13/11/98 09/02/00 00/00/00 27/11/01 22/10/99 13/11/01