



(11) **EP 1 878 447 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
31.12.2008 Bulletin 2009/01

(51) Int Cl.:
A61K 49/22 (2006.01)

(43) Date of publication A2:
16.01.2008 Bulletin 2008/03

(21) Application number: **07020190.0**

(22) Date of filing: **08.05.2003**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR
Designated Extension States:
LT LV MK

(71) Applicant: **Ultrast LLC**
Oceanside, NY 11572 (US)

(72) Inventor: **De Ziegler, Dominique**
1293 Bellevue (CH)

(30) Priority: **09.05.2002 US 378640 P**
21.11.2002 US 428145 P

(74) Representative: **Keen, Celia Mary**
J.A. Kemp & Co.
14 South Square
Gray's Inn
London WC1R 5JJ (GB)

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
03732330.0 / 1 506 022

(54) **Medium for contrast enhancement or convenience for ultrasonic, endoscopic and other medical examinations**

(57) The present invention relates to a particularly convenient medium for providing contrast enhancement and/or distension of the subject body or organ cavity during imaging, radiographic, visualization, or other similar medical examinations, including ultrasound, endoscopic examinations, MRI, x-ray, hystero-salpingograms, CT scans, and similar procedures. The present invention provides the contrast enhancement and/or distends the body or organ cavity without constant leakage of the medium or the resulting need to constantly or repeatedly infuse additional medium. The medium is designed to have sufficient viscosity or consistence initially -- whether as a solid, semi-solid, gel, viscous fluid, or otherwise -- to remain in the body or organ cavity for a time generally sufficient to complete the procedure, and then to facilitate easy removal or expulsion from the cavity, preferably by liquefying or losing viscosity. For imaging and radiographic examinations, the medium may provide enhanced contrast as well as the distension of the cavity. For visualization examinations, the medium typically would be optically transparent but provide the convenient reliable distension. The phase or viscosity change may be triggered by a variety factors, such as the passage of time, a change in temperature or pH, the addition of another substance, or any other trigger that liquefies or otherwise facilitates easy removal or expulsion of the composition from the cavity.

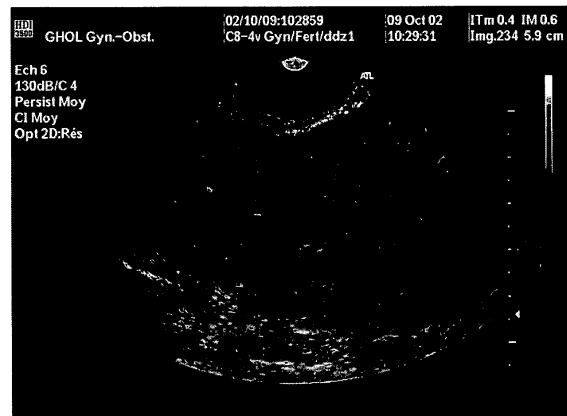


FIGURE 1A

EP 1 878 447 A3



EUROPEAN SEARCH REPORT

Application Number
EP 07 02 0190

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 94/07417 A (MOLECULAR BIOSYSTEMS INC) 14 April 1994 (1994-04-14)	1-4,6-9, 11-13, 25-30	INV. A61K49/22
Y	* claims; table A *	1-4,6-9, 11-13, 25-30	
X	----- RONCUZZI R ET AL: "EVALUATION OF THE DIAGNOSTIC POSSIBILITIES OF A VISCOSE WATER-SOLUBLE CONTRAST MEDIUM FOR HYSTEROSALPINGOGRAPHIC EXAMINATION IN FEMALE STERILITY" ATTUALITA DI OSTETRICA E GINECOLOGIA, SOCIETA EDITRICE UNIVERSO, ROMA, IT, vol. 14, no. 6, November 1968 (1968-11), pages 605-630, XP008020940 ISSN: 0004-7317 * page 605, paragraph 2 *	1-4,6-9, 11-13, 15,25-30	
X	----- EP 1 034 796 A (AKAIKE TOSHIHIRO ;NIHON SCHERING K K (JP)) 13 September 2000 (2000-09-13) -Page 6 paragraph 23 - Page 7, paragraph 30 * page 2, paragraphs 2,5,7 - page 4, paragraph 10; claims; examples 3,4 *	1-30	TECHNICAL FIELDS SEARCHED (IPC) A61K
X	----- NL 9 400 762 A (T G WIERSMA) 1 December 1995 (1995-12-01) * page 2, lines 12,13,17-20 - page 3, lines 15,16,29-35; examples *	1-4,6-9, 11-15, 25-30	
X	----- DE 858 457 C (HERBERT SCHOEN DR;WERNER HAASE KARLSRUHE DR; EGON KRUSE KARLSRUHE DIPL) 8 December 1952 (1952-12-08) * examples *	1,3,6,8, 11-13, 16,20, 24-30	
		----- -/--	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 November 2008	Examiner Vadot, Pierre
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

8
EPO FORM 1503 03/82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number
EP 07 02 0190

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	WO 95/08351 A (MOLECULAR BIOSYSTEMS INC) 30 March 1995 (1995-03-30) * claims; examples * -----	1-4,6-9, 11-13, 25-30	
Y	WARREN P S ET AL: "THE LIQUID-FILLED STOMACH - AN ULTRASONIC WINDOW TO THE UPPER ABDOMEN" JOURNAL OF CLINICAL ULTRASOUND, NORMAN HOUSE, DENVER, CO, US, vol. 6, no. 5, 1 October 1978 (1978-10-01), pages 315-320, XP002042204 ISSN: 0091-2751 Materials and methods -----	1-4,6-9, 11-13, 25-30	
Y	KNOPP M V ET AL: "EINFLUSS VON VISKOSITAET, KANUELENGROESSE UND TEMPERATUR BEI DER MASCHINELLEN KONTRASTMITTELAPPLIKATION IN DER COMPUTER- UND MAGNETRESONANZTOMOGRAPHIE EFFECTS OF VISCOSITY, CANNULA SIZE AND TEMPERATURE IN MECHANICAL CONTRAST MEDIA ADMINISTRATION IN CT A" ROFO - FORTSCHRITTE AUF DEM GEBIET DER RONTGENSTRAHLEN UND DER BILDGEBENDEN VERFAHREN, THIEME VERLAG, STUTTGART, DE, vol. 163, no. 3, September 1995 (1995-09), pages 259-264, XP008020943 ISSN: 1438-9029 "Einleitung", last sentence "Ergebnisse", first paragraph "Abbildung 2" "Diskussion" ----- -/--	1-4,6-9, 11-13, 25-30	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
8	Place of search The Hague	Date of completion of the search 21 November 2008	Examiner Vadot, Pierre
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number
EP 07 02 0190

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	RUBIN D L ET AL: "INFLUENCE OF VISCOSITY ON WIN 39996 AS A CONTRAST AGENT FOR GASTROINTESTINAL MAGENTIC RESONANCE IMAGING" INVESTIGATIVE RADIOLOGY, PHILADELPHIA, PA, US, vol. 30, no. 4, April 1995 (1995-04), pages 226-231, XP008020947 Last paragraph of the introduction part Paragraph "Conrats agents" and "Study design" Table 2 Discussion, last paragraph -----	1-4,6-9, 11-13, 25-30	
A	SHIRK ET AL.: "The use of low-viscosity fluids for hysteroscopy" THE JOURNAL OF THE AMERICAN ASSOCIATION OF GYNECOLOGIC LAPAROSCOPISTS, vol. 2, no. 1, 1994, pages 11-21, XP008020934 * the whole document * -----		TECHNICAL FIELDS SEARCHED (IPC)
A	OPHIR J ET AL: "CONTRAST AGENTS IN DIAGNOSTIC ULTRASOUND" ULTRASOUND IN MEDICINE AND BIOLOGY, NEW YORK, NY, US, vol. 15, no. 4, 1989, pages 319-333, XP000611239 ISSN: 0301-5629 ----- -/--		
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 November 2008	Examiner Vadot, Pierre
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

8
EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number
EP 07 02 0190

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	<p>DAVIES A C ET AL: "THE USE OF A LOW-OSMOLALITY CONTRAST MEDIUM IN HYSTEROSALPINGOGRAPHY: COMPARISON WITH A CONVENTIONAL CONTRAST MEDIUM" CLINICAL RADIOLOGY, LIVINGSTONE, HARLOW,, GB, vol. 36, no. 5, September 1985 (1985-09), pages 533-536, XP008020938 ISSN: 0009-9260</p> <p>-----</p>		
A	<p>HAAGE P ET AL: "GADOLINIUM CONTAINING CONTRAST AGENTS FOR PULMONARY VENTILATION MAGNETIC RESONANCE IMAGING PRELIMINARY RESULTS" INVESTIGATIVE RADIOLOGY, PHILADELPHIA, PA, US, vol. 37, no. 3, March 2002 (2002-03), pages 120-125, XP008020948</p> <p>-----</p>		
A	<p>BROWN M C ET AL: "FOLEY CATHETER TECHNIQUE FOR HYSTEROSALPINGOGRAPHY: POTENTIAL DIAGNOSTIC ERROR" EUROPEAN JOURNAL OF RADIOLOGY, ELSEVIER SCIENCE, NL, vol. 6, no. 3, August 1986 (1986-08), pages 226-227, XP008020937 ISSN: 0720-048X Conclusions</p> <p>-----</p>		TECHNICAL FIELDS SEARCHED (IPC)
A	<p>EKELUND L ET AL: "COMPARISON BETWEEN TWO RADIOGRAPHIC CONTRAST MEDIA FOR HYSTEROSALPINGOGRAPHY" ACTA OBSTETRICIA AND GYNECOLOGICA SCANDINAVICA, MUNKSGAARD, COPENHAGEN, DK, vol. 60, no. 4, 1981, pages 393-394, XP008020939 ISSN: 0001-6349</p> <p>-----</p> <p style="text-align: right;">-/--</p>		
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 November 2008	Examiner Vadot, Pierre
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p>		<p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>	

8
EPO FORM 1503 03.82 (FOAC01)



EUROPEAN SEARCH REPORT

Application Number
EP 07 02 0190

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	<p>IKEDA T ET AL: "THE SEPARATION PROCEDURE FOR INTRAUTERIN ADHESION (SYNECHIA UTERI) UNDER ROENTGENOGRAPHIC VIEW" 1 September 1981 (1981-09-01), FERTILITY AND STERILITY, ELSEVIER SCIENCE INC, NEW YORK, NY, US, PAGE(S) 333 - 338 , XP008067512 ISSN: 0015-0282 * the whole document *</p> <p style="text-align: center;">-----</p>		
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		21 November 2008	Vadot, Pierre
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p>		<p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>..... & : member of the same patent family, corresponding document</p>	

8
EPO FORM 1503 03.02 (F04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 02 0190

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-11-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date		
WO 9407417	A	14-04-1994	AU 5321694 A	26-04-1994	
			EP 0669823 A1	06-09-1995	
			US 5373846 A	20-12-1994	

EP 1034796	A	13-09-2000	AU 735018 B2	28-06-2001	
			AU 6311798 A	12-10-1998	
			CA 2284205 A1	24-09-1998	
			CN 1256634 A	14-06-2000	
			WO 9841241 A1	24-09-1998	
			NZ 500273 A	21-12-2001	
			US 6372194 B1	16-04-2002	

NL 9400762	A	01-12-1995	NONE		

DE 858457	C	08-12-1952	NONE		

WO 9508351	A	30-03-1995	CA 2172404 A1	30-03-1995	
			EP 0720487 A1	10-07-1996	
			JP 2918692 B2	12-07-1999	
			JP 8511033 T	19-11-1996	
			US 5385147 A	31-01-1995	

专利名称(译)	用于增强对比度或便于超声波，内窥镜和其他医学检查的介质		
公开(公告)号	EP1878447A3	公开(公告)日	2008-12-31
申请号	EP2007020190	申请日	2003-05-08
[标]申请(专利权)人(译)	超微		
申请(专利权)人(译)	ULTRAST LLC		
当前申请(专利权)人(译)	ULTRAST LLC		
[标]发明人	DE ZIEGLER DOMINIQUE		
发明人	DE ZIEGLER, DOMINIQUE		
IPC分类号	A61K49/22 A61B5/00 A61B1/00 A61B5/055 A61B8/12 A61K49/00		
CPC分类号	A61K49/226		
优先权	60/378640 2002-05-09 US 60/428145 2002-11-21 US		
其他公开文献	EP1878447A2		
外部链接	Espacenet		

摘要(译)

本发明涉及用于在成像，射线照相，可视化或其他类似的医学检查（包括超声，内窥镜检查，MRI，x射线，hystero）期间提供对象体或器官腔的对比增强和/或扩张的特别方便的介质 - 肺动脉图，CT扫描和类似程序。本发明提供了对比度增强和/或膨胀身体或器官腔，而没有介质的恒定泄漏或由此不断地或重复地输入附加介质的需要。该介质被设计为具有足够的粘度或一致性，无论是作为固体，半固体，凝胶，粘性流体或其它 - 在体内或器官腔中保留通常足以完成该程序的时间，以及然后优选通过液化或失去粘度来促进容易地从腔中移除或排出。对于成像和放射照相检查，介质可以提供增强的对比度以及腔的膨胀。对于可视化检查，介质通常是光学透明的，但提供方便可靠的扩张。相或粘度变化可以由多种因素触发，例如时间的流逝，温度或pH的变化，另一种物质的添加，或任何其它促进组合物从其中容易除去或排出的触发因素腔。

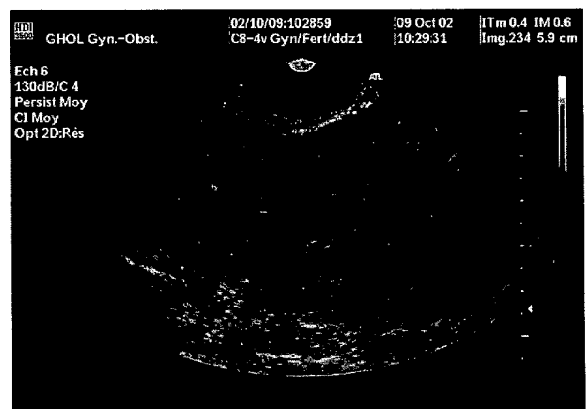


FIGURE 1A