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(54) Title: IN SITU HYPERPOLARIZATION OF IMAGING AGENTS

(57) Abstract: The present invention generally relates to compositions, systems and methods for inducing nuclear hyperpolarization in imaging agents after they have been introduced into a subject.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 06/47205

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - A61B 5/055 (2007.10)
 USPC - 424/9.3
 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)
 USPC: 424/9.3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 USPC: 424/9.3 (See Search Terms Below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 PubWest: PGPB,USPT,USOC,EPAB,JPAB Google Patents, Google Scholar.Goggle
 magnetic field, frequency, second radiation, first radiation, non-zero spin nuclei, zero-spin nuclei, n-type, p-type, impurity, magnetic resonance imaging, T1 time, relaxation time, Larmor frequency, unpaired electrons, spatial distribution, solid ima

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/0212323 A1 (Petersson et al.) 13 November 2003 (13.11.2003) abstract; para [0005], [0014], [0023], [0042], [0050].	1-91
Y	US 5,827,501 A (Jorgensen et al.) 27 October 1998 (27.10.1998) abstract; col1, ln 29-37; col2, ln 9-24; col 26, ln 48.	1-91
Y	US 2002/0058869 A1 (Axelsson et al.) 16 May 2002 (16.05.2002) para [0049], [0050].	5-8,65-67,73,78
Y	US 2004/0024307 A1 (Golman et al.) 05 February 2004 (05.02.2004) para [0021], [0029], [0031], [0108].	9-11, 15, 18-19
Y	US 2004/0170820 A1 (Yadav et al.) 02 September 2004 (02.09.2004) para [0007], [0115],[0210]	12-14, 16-17, 55-56, 76-77
Y	US 6,251,522 B1 (Tanaka et al.) 26 June 2001 (26.06.2001) abstract.	19
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Y	US 6,574,496 B1 (Golman et al.) 03 June 2003 (03.06.2003) abstract; col 1, ln 58-64; col 18, ln 33-36; col 22, ln 5-9.	40-41
Y	US 5,515,863 A (Damadian et al.) 14 May 1996 (14.05.1996) abstract, col 1, ln 61-65; col 3, ln3-6.	34-39

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* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
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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	

Date of the actual completion of the international search 28 November, 2007 (28.11.2007)	Date of mailing of the international search report 11 JAN 2008
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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.
Y	Golman et al. Molecular imaging with endogenous substances. PNAS, 02 September, 2003 vol. 100, no. 18, 10435-10439 abstract; pg 2, col 2, para 2.	42-43
Y	US 2002/0146371 A1 (Li et al.) 10 October 2002 (10.10.2002) para [0078].	43
Y	US 5,322,065 A (Leunbach) 21 Jun 1994 (21.06.1994) col 1, ln 55-63.	52
Y	US 6,011,396 A (Eckels et al.) 04 January 2000 (04.01.2000) col 6, ln 16-20.	47
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Y	US 2004/0001841 A1 (Nagavarapu et al.) 01 January 2004 (01.01.2004) para [0074]- [0075].	79-82
Y	US 2005/0238391 A1 (Hibino) 27 October 2005 (27.10.2005) para [0071].	85-91
Y	US 2005/0197677 A1 (Stevenson) 08 September 2005 (08.09.2005) para [0274].	85-91