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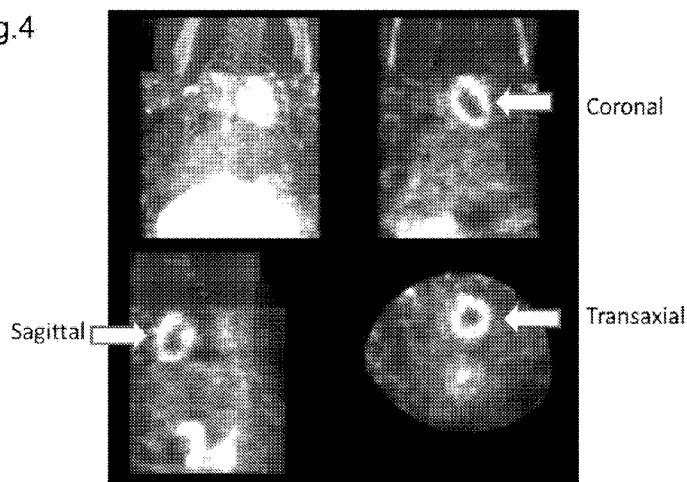
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(54) Title: PET/SPECT AGENTS FOR APPLICATIONS IN BIOMEDICAL IMAGING

Fig.4

(57) Abstract: Tracers that can be used for PET or SPECT imaging of the distribution of Pgp are disclosed. The tracers are metallo-probes that can comprise a radioactive metal ion such as ^{67}Ga or ^{68}Ga . Methods of synthesizing the tracers, and methods of imaging heart and other tissues are also disclosed. The tracers can be used to obtain high signal-to-background ratios for imaging tissues *in vivo* such as heart or tumor tissue. In various embodiments, disclosed tracers can exhibit, a) enhanced first pass extraction into heart tissue compared to presently available probes, b) linearity with true blood flow, c) enhanced detection of myocardial viability compared to presently available probes, d) reduced liver retention compared to presently available probes, and e) more efficient clearance from non cardiac and adjoining tissues compared to presently available probes.

A. CLASSIFICATION OF SUBJECT MATTER*C07C 211/49(2006.01)i, C07F 5/00(2006.01)i, C05D 9/00(2006.01)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)

C07C 211/49; A61K 43/00; A61K 49/00

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: Ga, imaging, hexadentate, ligand, radioactive, imaging, PET, SPECT, heart tissue, myocardial.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HSIAO, YUI-MAY et al., "Synthesis and biodistribution of lipophilic and monocationic gallium radiopharmaceuticals derived from N,N'-bis-(3-aminopropyl)-N,N'-dimethylethylenediamine: potential agents for PET myocardial imaging with ⁶⁸ Ga", Nuclear Medicine & Biology 2009, Vol. 36, 39-45.	1-32,35-40
A	See page 41 & Table 1.	33-34
X	WO 93-19787 A1 (PURDUE RESEARCH FOUNDATION) 14 October 1993	1-32,35-40
A	See pages 18-19 & 30; Tables 5-7, 10 & 12.	33-34
X	HARPSTRITE, SCOTT E. et al., "Metalloantimalarials: Targeting of P. falciparum Strains with Novel Iron(III) and Gallium(III) Complexes of an Amine Phenol Ligand", Inorg. Chem. 2003, Vol. 42, 2294-2300.	1-3,11,21,23-27,35-38
A	See page 2295; Scheme 1; Figures 1-2.	4-10,12-20,22,28-34,39-40



Further documents are listed in the continuation of Box C.



See patent family annex.

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

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"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

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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.
X	ZIEGLER, JAMES et al., "The Propionate of Heme Binds N402 Schiff Base Antimalarial Drug Complexes", Inorg. Chem. 2000, Vol. 39, 3731-3733.	1-3,8,11,13-16,21 ,23-27,35-38
A	See Figure 1.	4-7,9-10,12,17-20 ,22,28-34,39-40
X	OCHESKEY, JOSEPH A. et al., "Synthesis, characterization, and molecular structure of a gallium(III) complex of an amine-phenol ligand with activity against chloroquine-sensitive Plasmodium falciparum strains", J. Inorg. Biochem. 2003, Vol. 93, 265-270.	1-3,8,11,13,21 ,23-27,35-38
A	See page 266; Figure 1.	4-7,9-10,12,14-20 ,22,28-34,39-40

INTERNATIONAL SEARCH REPORT

Information on patent family members

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WO 93-19787 A1

14. 10. 1993

AU 3973193 A

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