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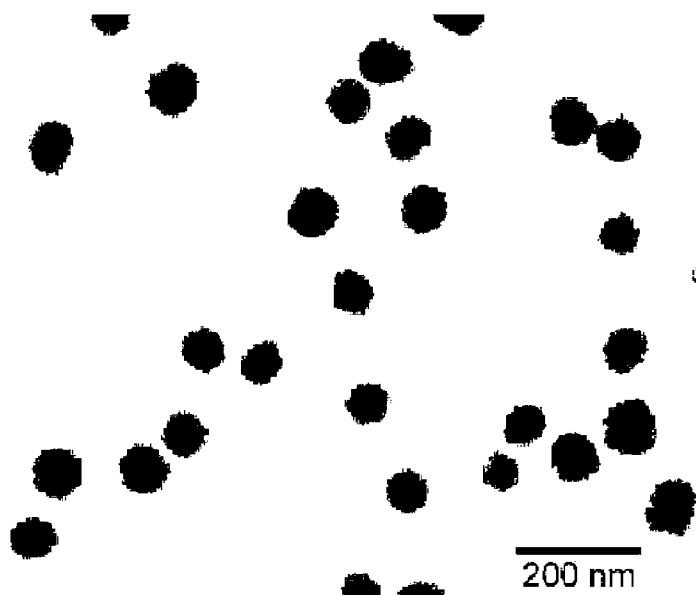
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(54) Title: FLUORESCENT SILICA NANOPARTICLES FOR DETECTING LYMPH NODE AND THE IDENTIFICATION METHOD OF LYMPH NODE USING THEREOF

[Fig. 1]



(57) Abstract: The present invention relates to fluorescent silica nanoparticles for detecting lymph node and identification method of lymph node using thereof. The functionalized silica nanoparticles containing fluorescent dye of this invention have a promising potential for sentinel node detection in the surgical field through fluorescent imaging.

WO 2010/030119 A3



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2009/005118**A. CLASSIFICATION OF SUBJECT MATTER****A61K 49/00(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)

A61K 49/00; A61K 49/06; A61K 49/18; A61K 51/00; A61P 35/00

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
(Chinese Patents and application for patent)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Google Scholar

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Choi, J, et al., "Core-shell silica nanoparticles as fluorescent labels for nanomedicine," Journal of Biomedical Optics, 2007, Vol.12, No.6, 064007. See abstract, p.064007-3 (2.2), and p.064007-4 (2.6).	1-4,10
T	Jeon, Y. H. et al, "In Vivo Imaging of Sentinel Nodes Using Fluorescent Silica Nanoparticles in Living Mice", Molecular Imaging and Biology, Vol.12, pp.155-162. (Published Online 15 October 2009) See the whole document.	1-4,10
T	KR 10-2010-0030195 A (Kang, K. W. et al.) 18 March 2010. See the whole document.	1-4,10
T	KR 10-0939342 B1 (KIM, J.-S. et al.) 29 January 2010. See the whole document.	1-4,10
T	Heister, E. et al., "Higher Dispersion Efficacy of Functionalized Carbon Nanotubes in Chemical and Biological Environments," ACS NANO, 2010, in press.(Accepted March 31,2010) See the whole document.	1-4,10

 Further documents are listed in the continuation of Box C. 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

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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

"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

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2009/005118

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	Kumar, R. et al., "In Vivo Biodistribution and Clearance Studies Using Multimodal Organically Modified Silica Nanoparticles", ACS NANO, 2010, Vol.4, No.2, pp.699-708. (Published Online 20 January 2010) See the whole document.	1-4,10

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2009/005118**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.: 5-9
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 5-9 pertain to methods for treatment of the human body by diagnostic methods 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.

PCT/KR2009/005118

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 10-2010-0030195 A	18.03.2010	None	
KR 10-0939342 B1	29.01.2010	None	