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Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

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(88) Date of publication of the international search report:
6 August 2009

(54) Title: RADIOFLUORINATION METHODS

(57) Abstract: The invention relates to conjugates of formula (V) or (VI), their use as radiopharmaceuticals, processes for their preparation, and synthetic intermediates used in such processes.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/088890

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61K51/08 C07K1/13

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 C07K

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 practical, search terms used)
EPO-Internal, BIOSIS, EMBASE, WPI Data, BEILSTEIN Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	OLBERG D E ET AL: "A novel prosthetic group for site-selective labeling of peptides for positron emission tomography" BIOCONJUGATE CHEMISTRY 200806 US, vol. 19, no. 6, June 2008 (2008-06), pages 1301-1308, XP002522665 ISSN: 1043-1802 the whole document	1-15, 20-28
Y	WO 2006/030291 A (AMERSHAM HEALTH AS [NO]; GE HEALTHCARE LTD [GB]; SOLBAKKEN MAGNE [NO];) 23 March 2006 (2006-03-23) claims 1-13	1-15, 20-28

☒ 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 document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *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.
- *G* document member of the same patent family

Date of the actual completion of the international search

14 April 2009

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/088890

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CARRASCO MICHAEL R ET AL: "Chemoselective alkylation of N-alkylaminoxy-containing peptides." ORGANIC LETTERS 3 AUG 2006, vol. 8, no. 16, 3 August 2006 (2006-08-03), pages 3529-3532, XP002522500 ISSN: 1523-7060 paragraph [0001] -----	1-15, 20-28
Y	BARK S J ET AL: "A HIGHLY EFFICIENT METHOD FOR SITE-SPECIFIC MODIFICATION OF UNPROTECTED PEPTIDES AFTER CHEMICAL SYNTHESIS" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, AMERICAN CHEMICAL SOCIETY, WASHINGTON, DC., US, vol. 122, no. 15, 19 April 2000 (2000-04-19), pages 3567-3573, XP002946035 ISSN: 0002-7863 paragraph [0001] -----	1-15, 20-28

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/088890

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.:
because they relate to subject matter not required to be searched by this Authority, namely:
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:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers 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.:

see annex

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-15,20-28

Method of synthesizing ^{18}F comprising conjugates of formula V and/or VI, compounds of said formulas and use of said compounds in PET-imaging.

2. claims: 16-19

Compounds of formulas I and/or III

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/088890

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006030291 A	23-03-2006	AT 404225 T	15-08-2008
		AU 2005283904 A1	23-03-2006
		BR PI0515175 A	08-07-2008
		CA 2578470 A1	23-03-2006
		CN 101151054 A	26-03-2008
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		KR 20070053750 A	25-05-2007
		PT 1791571 E	19-11-2008
		SI 1791571 T1	28-02-2009
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