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Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

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— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: WATER-SOLUBLE CONJUGATES AND METHODS OF PREPARATION

(57) Abstract: The present invention provides water-soluble conjugates and methods of using them in diagnostic and detection assays. Devices for performing detection and quantitation assays are also provided. In various embodiments the conjugates are useful in immunoassays and later flow assays. The invention provides methods of preparing the conjugates that result in higher yields and higher sensitivities for the assays.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/028973

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01N33/532

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)
G01N B01J A61K

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, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/67105 A (DADE BEHRING INC; KIRAKOSSIAN, HRAIR; PEASE, JOHN, S; SCHELP, CARSTEN;) 13 September 2001 (2001-09-13) abstract page 4, paragraph 1 - paragraph 2 page 46, last paragraph - page 47, paragraph 2 page 48, paragraph 2 page 49, paragraph 1 - paragraph 3	1-54
X	US 2002/058280 A1 (SINGH SHARAT ET AL) 16 May 2002 (2002-05-16) paragraph [0235] - paragraph [0239]; example 1 ----- -/--	1-54



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

25 August 2006

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07/09/2006

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INTERNATIONAL SEARCH REPORT

International application No
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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	US 5 486 479 A (ITO ET AL) 23 January 1996 (1996-01-23) column 11, line 27 - line 53 -----	1-28
X	US 6 627 460 B1 (LIHME ALLAN OTTO FOG ET AL) 30 September 2003 (2003-09-30) cited in the application	1-28, 55, 56
Y	abstract figures 4a, 4b claims 1-17; example 4F -----	29-54
X	KOVAR M ET AL: "HPMA copolymer-bound doxorubicin targeted to tumor-specific antigen of BCL1 mouse B cell leukemia" JOURNAL OF CONTROLLED RELEASE, ELSEVIER, AMSTERDAM, NL, vol. 92, no. 3, 30 October 2003 (2003-10-30), pages 315-330, XP004467645 ISSN: 0168-3659 abstract page 317, left-hand column, paragraph 2; table 1 page 318, left-hand column, paragraph 3; figure 1 -----	55, 56
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A	HERMANSON G T: "PREPARATION OF HAPTEN-CARRIER IMMUNOGEN CONJUGATES" BIOCONJUGATES TECHNIQUES, ACADEMIC PRESS, SAN DIEGO, CA, US, 1996, pages 419-455, XP008052932 the whole document -----	1-54
A	BRINKLEY M: "A BRIEF SURVEY OF METHODS FOR PREPARING PROTEIN CONJUGATES WITH DYES, HAPTENS, AND CROSS-LINKING REAGENTS" BIOCONJUGATE CHEMISTRY, ACS, WASHINGTON, DC, US, vol. 3, no. 1, January 1992 (1992-01), pages 2-13, XP000261480 ISSN: 1043-1802 the whole document -----	1-54

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/028973

Box 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 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 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.:
1-28, 29-56
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.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

Methods of preparing a water soluble conjugate characterised by contacting an intermediate conjugate comprising a carrier, a linker, a spacer and a targeting element/ligand with a signal component; and subjecting the suspension containing the reversible precipitate to an extraction.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2005/028973

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