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**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

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(54) Title: IMMUNOASSAYS USING AN AZLACTONE-MODIFIED POLYMERIC SUBSTRATE

(57) Abstract: Methods for performing immunological assays are provided which use an azlactone-modified polymeric substrate in which the azlactone moieties are quenched during the course of the immunoassay. The methods allow performing immunological assays with increased sensitivity, increased specificity, or both. Kits for performing immunological assays having increased sensitivity, increased specificity, or both, are also provided.



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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/14602

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>																										
IPC(7) : G01N 33/533, 534, 535, 545																										
US CL : 436/531, 532, 544, 545, 546, 825, 822; 435/7.94, 7.95																										
According to International Patent Classification (IPC) or to both national classification and IPC																										
<b>B. FIELDS SEARCHED</b>																										
Minimum documentation searched (classification system followed by classification symbols) U.S. : 436/531, 532, 544, 545, 546, 825, 822; 435/7.94, 7.95																										
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 practicable, search terms used) Please See Continuation Sheet																										
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>																										
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																								
Y,P	US 6,372,407 B1 (LIU et al) 16 April 2002 (16.04.2002), abstract; col. 10, lines 44-47.	1-117																								
Y	US 5,292,840 A (HEILMAMM et al) 08 March 1994 (08.03.1994), col. 22, "Reaction of the Radiolabeled Protein A with an Azlactone-Functional Bead", lines 46-50.	1-117																								
Y	US 5,262,484 A (COLEMAN et al) 16 November 1993 (16.11.1993), col. 4, lines 19-28; col. 9, line 49 - col. 10, line 2.	1-117																								
Y	US 5,344,701 A (GAGNON et al) 06 September 1994 (06.09.1994), col. 12, "Adduct Supports and Usefulness of the Invention"; Example 5.	1-117																								
Y	US 5,476,665 A (DENNISON) 19 December 1995 (19.12.1995), col. 11, lines 13-16; col. 7, "Adduct Composite Membranes and Usefulness of the Invention".	1-117																								
Y	US 5,200,471 A (COLEMAN et al) 06 April 1993 (06.04.1993), col. 22, "Protein Covalent Immobilization", lines 51-56.	1-117																								
Y	US 6,606,484 A (EXSTED et al) 16 May 2000 (16.05.2000), col. 14, lines 40-43; col. 7, line 58 - col. 8, line 15.	1-117																								
Y,P	US 6,379,952 B1 (RASMUSSEN et al) 30 April 2002 (30.04.2002), Example 3.	1-117																								
Y	WO 93/06925 A1 (MINNESOTA MINING AND MANUFACTURING COMPANY) 15 April 1993 (15.04.1993), Example 2, page 17.	1-117																								
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.																										
<table border="0"> <tr> <td colspan="2">* Special categories of cited documents:</td> <td>"T"</td> <td>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</td> </tr> <tr> <td>"A"</td> <td>document defining the general state of the art which is not considered to be of particular relevance</td> <td>"X"</td> <td>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</td> </tr> <tr> <td>"E"</td> <td>earlier application or patent published on or after the international filing date</td> <td>"Y"</td> <td>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</td> </tr> <tr> <td>"L"</td> <td>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)</td> <td>"&amp;"</td> <td>document member of the same patent family</td> </tr> <tr> <td>"O"</td> <td>document referring to an oral disclosure, use, exhibition or other means</td> <td></td> <td></td> </tr> <tr> <td>"P"</td> <td>document published prior to the international filing date but later than the priority date claimed</td> <td></td> <td></td> </tr> </table>			* 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 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	"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)	"&"	document member of the same patent family	"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		
* 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																							
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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 04 March 2003 (04.03.2003)		Date of mailing of the international search report 14 MAR 2003																								
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230		Authorized officer Mary E. Ceperley Telephone No. (703) 308-1234																								

# INTERNATIONAL SEARCH REPORT

PCT/US02/14602

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 99/53319 A2 (INNOVATIVE PROPERTIES COMPANY) 21 October 1991 (21.10.1999), abstract, page 12, lines 18-32; page 22, first full paragraph.	1-117
Y,P	US 6,395,483 B1 (PATIL et al) 28 May 2002 (28.05.2002), abstract; col. 10, lines 56-62; col. 11, line 64 - col. 12, line 31.	20-22, 50-52, 81-83

## INTERNATIONAL SEARCH REPORT

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### Continuation of Item 4 of the first sheet:

The title is deficient under PCT Rule 4.3 for the reason that it does not provide a precise indication of the point of novelty. The text of the new title is as follows: "IMMUNOASSAYS USING AN AZLACTONE-MODIFIED POLYMERIC SUBSTRATE".

### Continuation of B. FIELDS SEARCHED Item 3:

APS, CAS ONLINE

search terms: azlactone, quence, immunoassay, polymer, heat shrink, sandwich, indirect