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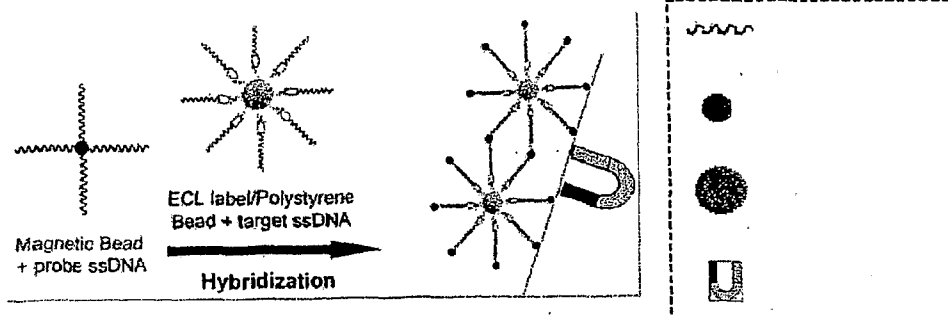
— with international search report

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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: METHODS AND COMPOSITIONS FOR THE DETECTION OF BIOLOGICAL MOLECULES USING A TWO PARTICLE COMPLEX



(57) Abstract: The invention provides methods of detecting analytes of interest in a sample using electrogenerated chemiluminescence. The invention also provides compositions comprising at least one solid support that entraps or contains an electrogenerated chemiluminescent moiety.

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2005/022388

A. CLASSIFICATION OF SUBJECT MATTER

INV. G01N33/58 G01N33/543 C12Q1/68

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)

C12Q G01N

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MIAO W ET AL: "ELECTROGENERATED CHEMILUMINESCENCE. 72. DETERMINATION OF IMMOBILIZED DNA AND C-REACTIVE PROTEIN ON AU(111) ELECTRODES USING TRIS(2,2'-BIPYRIDYL)RUTHENIUM(II) LABELS" ANALYTICAL CHEMISTRY.A, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 75, no. 21, 1 November 2003 (2003-11-01), pages 5825-5834, XP009071489 cited in the application the whole document	1-100, 197-206
X	WO 92/14139 A (IGEN, INC) 20 August 1992 (1992-08-20)	197-200
Y	Example 7.	1-100, 201-206
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- * & * document member of the same patent family

Date of the actual completion of the international search

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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.
Y	WO 96/21154 A (IGEN, INC) 11 July 1996 (1996-07-11)	197-200
Y	Example 1.	1-100, 201-206
X	----- WO 99/42618 A (DADE BEHRING INC) 26 August 1999 (1999-08-26) p. 56, l. 28; p. 57, l. 24. -----	197-200
P,X	MIAO W ET AL: "ELECTROGENERATED CHEMILUMINESCENCE. 77. DNA HYBRIDIZATION DETECTION AT HIGH AMPLIFICATION WITH ÄRU(BPY)3Ü2+-CONTAINING MICROSPHERES" ANALYTICAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 76, no. 18, 15 September 2004 (2004-09-15), pages 5379-5386, XP001209771 ISSN: 0003-2700 the whole document	1-100, 197-206
P,X	----- MIAO W ET AL: "ELECTROGENERATED CHEMILUMINESCENCE. 80. C-REACTIVE PROTEIN DETERMINATION AT HIGH AMPLIFICATION WITH ÄRU(BPY)3Ü2+ CONTAINING MICROSPHERES" ANALYTICAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 76, no. 23, 1 December 2004 (2004-12-01), pages 7109-7113, XP001226733 ISSN: 0003-2700 the whole document -----	1-100, 197-206

INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/US2005/022388

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9214139	A	20-08-1992	AT 173542 T	15-12-1998
			AU 1420692 A	07-09-1992
			CA 2103674 A1	07-08-1992
			CN 1495425 A	12-05-2004
			CN 1064945 A	30-09-1992
			DE 69227624 D1	24-12-1998
			DE 69227624 T2	08-07-1999
			DK 570518 T3	02-08-1999
			EP 0570518 A1	24-11-1993
			ES 2126591 T3	01-04-1999
			GR 3029446 T3	28-05-1999
			HK 1017970 A1	11-08-2000
			IE 920380 A1	12-08-1992
			IL 100867 A	08-12-1995
			JP 3182515 B2	03-07-2001
			JP 11148901 A	02-06-1999
			JP 3061416 B2	10-07-2000
			JP 6509412 T	20-10-1994
			KR 226231 B1	15-10-1999
			NZ 241537 A	25-06-1993
WO 9621154	A	11-07-1996	AU 4756296 A	24-07-1996
WO 9942618	A	26-08-1999	EP 1055005 A1	29-11-2000
			JP 2002504350 T	12-02-2002
			US 6365346 B1	02-04-2002
			US 2002182620 A1	05-12-2002