(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 5 June 2003 (05.06.2003)

PCT

(10) International Publication Number WO 03/046514 A3

(51) International Patent Classification⁷: G01N 33/53, 33/543, 33/551

(74) Agents: MAY, William, H.; Beckman-Coulter, Inc., 4300 North Harbor Boulevard, Fullerton, CA 92834 et al. (US).

(21) International Application Number: PCT/US02/38257

(81) Designated State (national): JP.

(22) International Filing Date:

27 November 2002 (27.11.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

09/995,520 28 November 2001 (28.11.2001) US

(71) Applicant: **BECKMAN COULTER, INC.** [US/US]; 4300 North Harbor Boulevard, Fullerton, CA 92835 (US).

(72) Inventor: BELL, Michael, L.; 2931 Hickory Place, Fullerton, CA 92835 (US).

(84) Designated States *(regional)*: European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR).

Published:

- with international search report
- 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: 31 July 2003

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.



03/046514 A3

(54) Title: PARTICLE-BASED LIGAND ASSAY WITH EXTENDED DYNAMIC RANGE

(57) Abstract: This invention relates to methods of assaying one or more analytes simultaneously. The assay of this invention are capable of providing wide dynamic range and rapid processing times. A wide dynamic working range is achieved by simultaneously incubating a sample which may contain the analyte(s) of interest with two or more independently determinable classes of particles coated with an analyte-specific binding partner. The two or more particle classes differ from each other at least in size. The analyte concentration is obtained from readings derived from these two classes by means of a combined standard curve.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/38257

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : G01N 33/53, 33/543, 33/551, US CL : 435/7.1; 436/518, 523, 524 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) U.S.: 435/7.1; 436/518, 523, 524			
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)			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where a	ppropriate, of the relevant passages	Relevant to claim No.
A	US 5,585,241 A (LINDMO et al) 17 December 199	96 (17.12.1996), whole document.	1-45
Α	US 5,981,180 A (CHANDLER et al) 9 November 1999 (09.11.1999), whole document.		1-45
A	US 5,851,777 A (HUNTER et al) 22 December 1998 (22.12.1998), whole document.		1-45
A	US 6,248,597 B (EDA et al) 19 June 2001 (19.06.2001), whole document.		1-45
Α	WO 89-11101 (DYNAL, A.S.) 16 November 1989 (16.11.1989), whole document.		1-45
		·	
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		"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	
•	ricular 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		ered to involve an inventive
to establi	L" document which may throw doubts on priority claim(s) or which is cited "Y" document of particular relevan to establish the publication date of another citation or other special reason (as specified) combined with one or more of combination being obvious to		ep when the document is h documents, such
"O" document	"O" document referring to an oral disclosure, use, exhibition or other means "&" document member of the same paten		family
"P" document published prior to the international filing date but later than the			
Date of the a	ctual completion of the international search	Date of mailing of the international sear	chreport
	003 (23.01.2003)	TT 201/ (101)	
	ailing address of the ISA/US	Authorized officer 11/1/	1 / 2
Commissioner of Patents and Trademarks Box PCT		Gary Counts	Mins to
Washington, D.C. 20231 Facsimile No. (703)305-3230		Telephone No. (703) 305-1444	mens of
Form PCT/ISA/210 (second sheet) (July 1998)			