

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number  
**WO 2005/009202 A3**

- (51) International Patent Classification<sup>7</sup>: **G01N 33/48**
- (21) International Application Number:  
PCT/US2004/015123
- (22) International Filing Date: 12 May 2004 (12.05.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/470,175 12 May 2003 (12.05.2003) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- 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:  
10 November 2005
- 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: AUTOMATIC IDENTIFICATION OF BIOAGENTS

(57) Abstract: Automated rapid identification of unknown bioagents is enabled using a self-contained device coupled to a system executive module. The device includes two decks separated by an airlock and a storage area for storing reagents and filter plates for use in identifying bioagents. A programmable robot assembly isolates and purifies DNA from the bioagent in the first deck and prepares the sample for PCR. The first deck is preferably maintained at a higher atmospheric pressure than the area external to the device, while the second deck is maintained at a lower atmospheric pressure than the external area to avoid contamination. After isolation and purification, the sample is passed through the airlock to the second deck, where it undergoes PCR. After washing and eluting of the sample, the molecular mass of the sample is determined by mass spectroscopy. The system executive provides automated request handling, job scheduling, resource management and drill-down analysis.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/15123

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : G01N 33/48  
 US CL : 702/19

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. : 435/4,6; 702/19,20,22; 703/11

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2002/0028923 A1 (Cowser et al.) 7 March 2002 (07.03.2002), see especially Abstract, Figures 1-5, and paragraphs 0023-0026 and 0050-0117.	1-10 and 16 ----- 11-15
Y	US 2002/0090320 A1 (Burow et al.) 11 July 2002 (11.07.2002), see especially Abstract, Figures 1, 3, 4, and 7, paragraphs 0009-0025 and 0040-0097.	11-15
Y,P	US 6,856,914 A (Pelech) 15 February 2005 (15.02.2005), see entire document	1-16

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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"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
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"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 September 2005 (04.09.2005)

Date of mailing of the international search report

**03 OCT 2005**

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**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US04/15123

Continuation of B. FIELDS SEARCHED Item 3:

EAST, Biosis, Medline, CAPlus

search terms: identify, mass spectroscopy, PCR, polymerase chain reaction, computer, program, request, protocol, instruction, robotic, airlock, thermocycler, temperature control, seal