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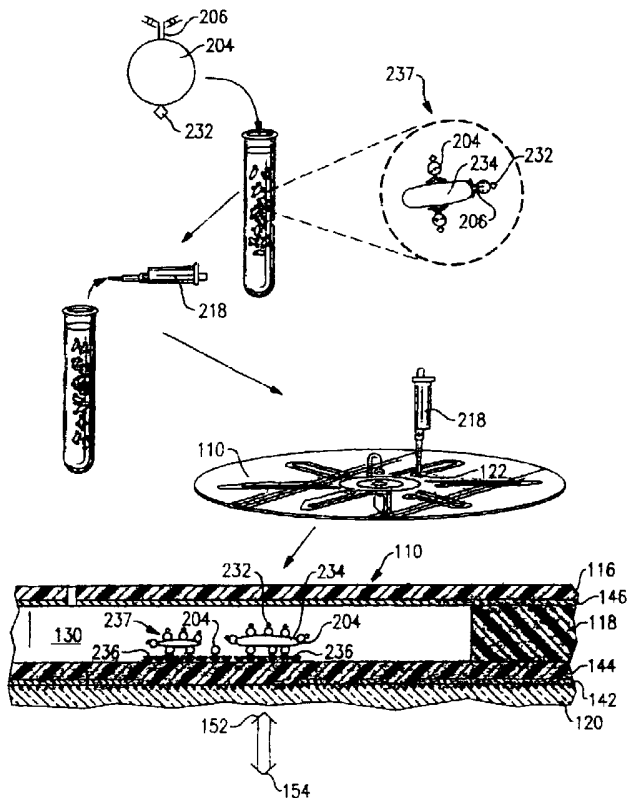
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[Continued on next page]

(54) Title: METHODS AND APPARATUS FOR USE IN DETECTION AND QUANTITATION OF VARIOUS CELL TYPES AND USE OF OPTICAL BIO-DISC FOR PERFORMING SAME



(57) Abstract: Methods and apparatus for conducting differential cell counts including leukocytes and use of optical bio-discs for performing such cell counts is disclosed. The bio-disc includes a substantially circular substrate having a center and an outer edge, an active layer associated with the substrate; a target zone disposed between the center and the outer edge; and a plurality of capture antibodies bound to the active layer such that the antibodies are immobilized on the active layer in the target zone.

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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*

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.

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16 June 2005

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N33/569 G01N33/543 G01N35/00

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)

IPC 7 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, EMBASE, BIOSIS, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 311 492 A (SANOFI SA) 12 April 1989 (1989-04-12) the whole document in particular page 3, lines 45-57; page 5, lines 30-62; page 6, line 65 - page 7, line 5; Example 2 and 3.	1-8, 11-14, 21-38
Y	WO 03/006956 A (GLENCROSS DEBORAH KIM ; NAT HEALTH LAB SERVICE (ZA); UNIV WITWATERSRAN) 23 January 2003 (2003-01-23) the whole document in particular page 6, line 1 - page 7, line 3; Example 1.	1-8, 11-14, 21-38



Further documents are listed in the continuation of box C.



Patent family members are listed in 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
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- *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.
- * & * document member of the same patent family

Date of the actual completion of the international search

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14. 04. 05

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INTERNATIONAL SEARCH REPORT

International Application No

PC., 2004/002780

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 02/44695 A (BURSTEIN TECHNOLOGIES INC) 6 June 2002 (2002-06-06) the whole document in particular page 5, lines 4-25; page 10, lines 1-15; page 11, line 27 - page 12, line 7; page 15, line - page 18, line 22; page 21, lines 6-27; -----	1-8, 11-14, 21-38
Y	US 2002/076804 A1 (KIEFFER-HIGGINS STEPHEN G ET AL) 20 June 2002 (2002-06-20) the whole document in particular Figure 2; paragraphs 38-39, 41, 48, 100, 174-176 -----	1-8, 11-14, 21-38
Y	WO 00/05582 A (BURSTEIN LAB INC) 3 February 2000 (2000-02-03) the whole document in particular page 110-117. -----	1-8, 11-14, 21-38
A	US 2002/072078 A1 (LIU JIUAN ET AL) 13 June 2002 (2002-06-13) the whole document -----	1-8, 11-14, 21-38
A	US 5 348 859 A (COULTER WALLACE H ET AL) 20 September 1994 (1994-09-20) the whole document -----	1-8, 11-14, 21-38

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.:

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.:

1-8, 11-14, 21-38

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/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-8,11-14,21-38

A bio-disc comprising a target zone having immobilised thereon capture antibodies, said antibodies binding to a surface marker common to different populations of cells (i.e. target and non-target cells). Methods for detecting subpopulations of cells in a sample using said bio-discs by tagging said subpopulations with antibodies specific for the target subpopulations.

2. claims: 9,10,15-20,39-50

A bio-disc having one or a plurality of capture antibodies immobilised in a target zone. The nature of the capture antibodies is not defined. Methods for detecting target cells in a sample using said bio-discs.

3. claims: 51-54

A method for detecting target cells, wherein capture antibodies are immobilised on a bio-disc using a pair of affinity binding agents. The capture antibody is incubated with the target cells prior to application of the sample to the bio-disc.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/ 004/002780

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International Application No

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