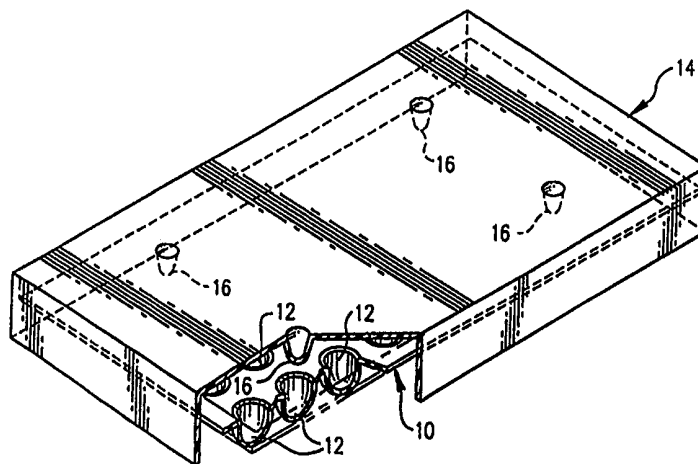




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G01N 33/53, 33/543, B01L 3/00, G01N 33/48, 33/569	A3	(11) International Publication Number: WO 99/22017 (43) International Publication Date: 6 May 1999 (06.05.99)
(21) International Application Number: PCT/US98/22628 (22) International Filing Date: 27 October 1998 (27.10.98) (30) Priority Data: 60/063,635 27 October 1997 (27.10.97) US (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 60/063,635 (CIP) Filed on 27 October 1997 (27.10.97) (71) Applicant (for all designated States except US): IDEXX LABORATORIES, INC. [US/US]; One Idexx Drive, Westbrook, ME 04092 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): PIERSON, Mark, W. [US/US]; 316 Bradley Street, Saco, ME 04072 (US). TOWNSEND, David, E. [US/US]; 29 Church Street, Scarborough, ME 04074-9604 (US). GU, Haoyi [US/US]; 22 Waverly Street, Portland, ME 04103 (US). NAQUI, Ali [US/US]; Two Pinehurst Lane, Falmouth, ME 04105 (US).	(74) Agents: JOHNSON, John, M. et al.; Lyon & Lyon LLP, Suite 4700, 633 West Fifth Street, Los Angeles, CA 90071-2066 (US). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> (88) Date of publication of the international search report: 5 August 1999 (05.08.99)	

(54) Title: DEVICE AND METHODS FOR DETERMINATION OF ANALYTE IN A SOLUTION



(57) Abstract

Method and assay devices for the detection of the presence or amount of biological material, analyte(s), or microorganism(s) in a sample. The method includes the steps of liquefying the sample (if necessary) and distributing the liquefied sample over the surface of the assay device. The device may comprise an incubation plate, a dip stick device, or other devices. The devices have at least one reagent provided within the devices. Some devices have a generally flat horizontal surface which is divided into a plurality of recessed wells. Others have one or more surfaces with reagent island(s) immobilized thereon. Each well or reagent island is adapted to hold an aliquot of liquid. The wells or reagent islands are sized and shaped, and formed of a suitable material, to hold the aliquot within the well or reagent island by surface tension. Any excess liquid from the liquefied sample is drained from the surface of the device. The method then involves incubating the assay device until the presence or amount of the biological material, analyte, or microorganism is determined.

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INTERNATIONAL SEARCH REPORT

In national Application No

PCT/US 98/22628

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G01N33/53 G01N33/543 B01L3/00 G01N33/48 G01N33/569

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 6 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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 496 200 A (BECTON DICKINSON CO) 29 July 1992 see abstract; figure 5	1,3-6,8
Y	see page 2, line 17 - line 25	1,2,9,45
A	see page 3, line 41 - page 4, line 44	7,10
Y	WO 97 18455 A (IDEXX LAB INC) 22 May 1997 see page 3, line 9 - page 5, line 2	1,2,9, 11-22, 45-47
Y	GB 2 188 418 A (GEN BIOLOG CORP) 30 September 1987 see abstract; figures 1-7 see page 1, line 106 - line 129 -/--	11-22, 46,47

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

17 May 1999

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Gundlach, B

INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	EP 0 709 678 A (SUMITOMO PHARMA ; ISHIKAWA EIJI (JP)) 1 May 1996 see abstract see page 5, line 56 - page 6, line 6; figure 1 ---	11-22, 46,47
A	EP 0 042 755 A (UNILEVER PLC ; UNILEVER NV (NL)) 30 December 1981 see page 3, line 32 - page 4, line 18; figure 2 see page 8, line 1 - page 9, line 31 see page 16, line 14 - line 27 ---	11-22, 46,47
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US 98/22628

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 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

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: 1-10,45

a) a further incubation plate, useful to determine an analyte in a liquid sample

2. Claims: 11-22,46,47

b) a further incubation plate, comprising a lid having protrusions

3. Claims: 23-31,48,50

c) a further dip-stick related device to determine an analyte in a liquid sample, comprising at least one "reagent island"

4. Claims: 32-44,49

d) a further device related capable of determine an analyte in a liquid sample, comprising "reagent islands" on one or more surfaces

INTERNATIONAL SEARCH REPORT

Information on patent family members

I. International Application No

PCT/US 98/22628

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