



(51) International Patent Classification:

G01N 33/542 (2006.01) G01N 33/58 (2006.01)
G01N 33/569 (2006.01)

(21) International Application Number:

PCT/GB2009/050303

(22) International Filing Date:

27 March 2009 (27.03.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0805608.7 28 March 2008 (28.03.2008) GB

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

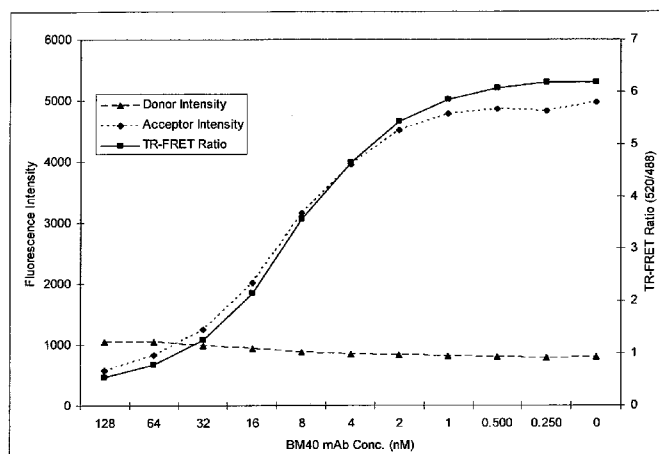
Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

[Continued on next page]

(54) Title: TIME-RESOLVED FLUORESCENCE ENERGY TRANSFER (TR-FRET) ASSAY FOR DETECTING EXPOSURE TO AN INFECTIOUS ORGANISM

Figure 1



(57) Abstract: A method for detecting the presence of a diagnostic moiety indicative of exposure to an infectious organism in a biological sample taken from a human or animal, said method comprising; (a) adding to said sample a first fluorescently labelled reagent which binds said diagnostic moiety, and a second fluorescently labelled reagent which either binds said diagnostic moiety in addition to said first fluorescently labelled reagent, or which binds the first fluorescently labelled reagent or a complex comprising the first fluorescently labelled reagent in competition to the said diagnostic moiety, wherein a label on one of the first or second fluorescently labelled reagent acts as a fluorescent energy donor compound and wherein the other of the first or second fluorescently labelled reagent acts as a fluorescent energy acceptor compound which is able to accept fluorescent energy from said donor compound; (b) exciting the fluorescent energy donor compound by illuminating with light of a wavelength which is absorbed by said fluorescent energy donor compound; (c) measuring fluorescent signal emitted by said fluorescent energy acceptor compound as a result of its absorption of the fluorescent energy from the donor compound after a time delay; and (d) relating the results to the presence or absence of diagnostic moiety in said sample.



(88) Date of publication of the international search report:
23 December 2009

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2009/050303

A. CLASSIFICATION OF SUBJECT MATTER

INV. G01N33/542 G01N33/569 G01N33/58

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)

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, WPI Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 2006/240571 A1 (ZÄHNER JOSEPH E [US]) 26 October 2006 (2006-10-26) cited in the application the whole document abstract column 2, paragraph 22 - paragraph 23; figures 1,2 example column 4, paragraph 32 - paragraph 35 claims 11-14,16 column 3, paragraph 27 claims 1-3 ----- -/--	1-8,12, 15-21 9-11



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
- *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)
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- *P* document published prior to the international filing date but later than the priority date claimed

- *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
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- *&* document member of the same patent family

Date of the actual completion of the international search

23 July 2009

Date of mailing of the international search report

04/11/2009

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INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2009/050303

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 2006/234215 A1 (HUDSON BRUCE S [US]) 19 October 2006 (2006-10-19) the whole document abstract claims 1,5,13-16,18	1-8,12, 15-21 9-11
Y	QIN QIU-PING ET AL: "Time-resolved fluorescence resonance energy transfer assay for point-of-care testing of urinary albumin." CLINICAL CHEMISTRY JUL 2003, [Online] vol. 49, no. 7, July 2003 (2003-07), pages 1105-1113, XP002538503 ISSN: 0009-9147 Retrieved from the Internet: URL:http://www.clinchem.org/cgi/reprint/49 /7/1105> [retrieved on 2009-07-22] the whole document abstract	1-8,12, 15-21
A	GALL D ET AL: "Fluorescence polarization assay for detection of Brucella abortus antibodies in bulk tank bovine milk samples." CLINICAL AND DIAGNOSTIC LABORATORY IMMUNOLOGY NOV 2002, [Online] vol. 9, no. 6, November 2002 (2002-11), pages 1356-1360, XP002538523 ISSN: 1071-412X Retrieved from the Internet: URL:http://cvi.asm.org/cgi/reprint/9/6/135 6> [retrieved on 2009-07-22] the whole document abstract	9-11
A	GARIN-BASTUJI B ET AL: "The diagnosis of brucellosis in sheep and goats, old and new tools" SMALL RUMINANT RESEARCH, ELSEVIER, AMSTERDAM, NL, vol. 62, no. 1-2, 1 March 2006 (2006-03-01), pages 63-70, XP025117948 ISSN: 0921-4488 [retrieved on 2006-03-01] the whole document abstract	9-11

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INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2009/050303

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	NEWBY D T ET AL: "REAL-TIME PCR DETECTION OF BRUCELLA ABORTUS: A COMPARATIVE STUDY OF SYBR GREEN I, 5'-EXONUCLEASE, AND HYBRIDIZATION PROBE ASSAYS" APPLIED AND ENVIRONMENTAL MICROBIOLOGY, AMERICAN SOCIETY FOR MICROBIOLOGY, US, vol. 69, no. 8, 1 August 2003 (2003-08-01), pages 4753-4759, XP008070970 ISSN: 0099-2240 the whole document abstract	9-11
A	ANONYMOUS: "Atlas Brucella Test (Rose Bengal)" ATLAS MEDICAL, [Online] 12 June 2004 (2004-06-12), XP002538539 Retrieved from the Internet: URL: http://www.atlas-site.co.uk/index_files/website/\$8.01.00.0.0050%20Brucella%20Rose%20Bengal%2050%20T%20S06.pdf [retrieved on 2009-07-22] Atlas Brucella Test (Rose Bengal)	9-11
A	HINCHLIFFE P M ET AL: "Detection of complement fixation by enzyme linked immunosorbant assay (COMPELISA)." JOURNAL OF CLINICAL PATHOLOGY JAN 1983, [Online] vol. 36, no. 1, January 1983 (1983-01), pages 100-103, XP002538540 ISSN: 0021-9746 Retrieved from the Internet: URL: http://jcp.bmj.com/cgi/reprint/36/1/100 [retrieved on 2009-07-22] the whole document abstract	9-11
A	BORAKER D K ET AL: "BrucELISA: an enzyme-antibody immunoassay for detection of Brucella abortus antibodies in milk: correlation with the Brucella ring test and with shedding of viable organisms." JOURNAL OF CLINICAL MICROBIOLOGY OCT 1981, [Online] vol. 14, no. 4, October 1981 (1981-10), pages 396-403, XP002538541 ISSN: 0095-1137 Retrieved from the Internet: URL: http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=271991&blobtype=pdf [retrieved on 2009-07-22] the whole document abstract	9-11

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2009/050303

Box No. 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 No. 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 allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
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.:

see annex

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ 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: 9-11

methods and kits for detecting exposure of a human or animal to an infectious organism of Brucella species using TR-FRET technology;

2. claims: 13-14

methods and kits for detecting exposure of a human or animal to a bovine viral diarrhoea (BVD) virus using TR-FRET technology.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2009/050303

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006240571 A1	26-10-2006	NONE	
US 2006234215 A1	19-10-2006	NONE	