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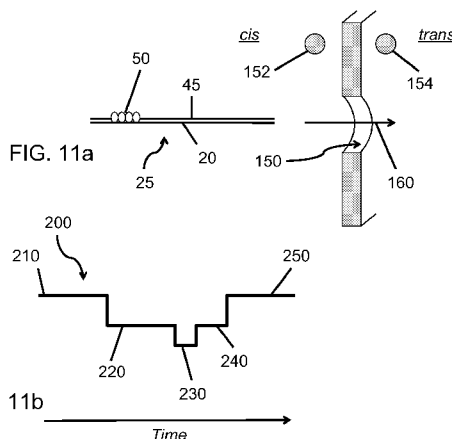
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(54) Title: ASSAY METHODS USING DNA BINDING PROTEINS



(57) Abstract: Assay methods for preparing a biomolecule analyte includes hybridizing a sequence specific oligonucleotide probe to a biomolecule template and reacting the resulting analyte with a binding moiety.

WO 2012/109574 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/024708

A. CLASSIFICATION OF SUBJECT MATTER
 INV. C12Q1/68
 ADD.

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)
 C12Q

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)
 EPO-Internal, BIOSIS, Sequence Search, EMBASE, FSTA, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010/297644 A1 (KOKORIS MARK STAMATIOS [US] ET AL) 25 November 2010 (2010-11-25) paragraphs [0065], [0095], [0097] - [0101], [0105], [0115] figures 3B, 3C	1-3,7-20
X	WO 00/11220 A1 (UNIV WASHINGTON [US]; MONSANTO CO [US]; CHEN XIANGNING [US]; LEVINE LE) 2 March 2000 (2000-03-02) page 6, line 26 - page 7, line 14 page 8, lines 1-3 page 14, lines 1-32 page 17, line 16 - page 18, line 5 figure 2	1-11,14, 15,19,20

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 application or patent 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

"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

"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 14 June 2012	Date of mailing of the international search report 25/10/2012
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Ripaud, Leslie
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/024708

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2010/310421 A1 (OLIVER JOHN S [US] ET AL) 9 December 2010 (2010-12-09) paragraphs [0265], [0297] figure 15	1-20
A	----- US 2003/186256 A1 (FISCHER ACHIM [DE]) 2 October 2003 (2003-10-02) paragraphs [0011] - [0019], [0035] - [0042], [0051] - [0053] figure 4	1-20
A	----- K Mc Entee ET AL: "Binding of the recA Protein of Escherichia coli to Single- and Double- Stranded DNA", the Journal of Biological Chemistry, 25 August 1981 (1981-08-25), pages 8835-8844, XP055029697, Retrieved from the Internet: URL: http://www.jbc.org/content/256/16/8835.full.pdf#page=1&view=FitH [retrieved on 2012-06-13] cited in the application abstract	1-20
A	----- DRMANAC R ET AL: "SEQUENCING BY HYBRIDIZATION (SBH): ADVANTAGES, ACHIEVEMENTS, AND OPPORTUNITIES", ADVANCES IN BIOCHEMICAL ENGINEERING, BIOTECHNOLOGY, SPRINGER, BERLIN, DE, vol. 77, 1 January 2002 (2002-01-01), pages 75-101, XP009059927, ISSN: 0724-6145 the whole document	1-20
A	----- US 2009/111115 A1 (DRMANAC RADOJE [US] ET AL) 30 April 2009 (2009-04-30) paragraphs [0034] - [0035] figures 1-3	1-20
A	----- US 2009/035777 A1 (KOKORIS MARK STAMATIOS [US] ET AL) 5 February 2009 (2009-02-05) paragraphs [0231] - [0235] figures 3-5	1-20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/024708

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 all searchable 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.:

1-20

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: 1-20

concerns a method for preparing a biomolecule analyte comprising hybridising a plurality of identical probes to a single-stranded nucleic acid template thereby forming an analyte having at least one single-stranded region and at least two duplex regions, conducting a limited base extension so that a single-stranded portion remains, and reacting the resulting analyte with a binding moiety that selectively binds to the single-stranded portion.

2. claims: 21-37

concerns a method for preparing a biomolecule analyte comprising hybridising a plurality of identical RNA probes to a DNA template thereby forming an analyte having at least one single-stranded region and at least one duplex region, conducting a base extension to fill in each single-stranded region on the analyte, removing the RNA probes, and reacting the resulting analyte with a binding moiety that selectively binds to single-stranded segments.

3. claims: 38-56

concerns a method for preparing a biomolecule analyte comprising hybridising a plurality of identical probes to a single-stranded nucleic acid template thereby forming an analyte having at least one single-stranded region and at least one duplex region and reacting the resulting analyte with a binding moiety that selectively binds to the duplex region.

4. claims: 57-75

concerns a method for preparing a biomolecule analyte comprising hybridising a plurality of identical probes to a single-stranded nucleic acid template thereby forming an analyte having at least one single-stranded region and at least one duplex region and reacting the resulting analyte with a binding moiety that selectively binds to the single-stranded region.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/024708

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
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