

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference B281-0008WO1	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2018/068441	International filing date (<i>day/month/year</i>) 6 July 2018 (06-07-2018)	(Earliest) Priority Date (<i>day/month/year</i>) 7 July 2017 (07-07-2017)
Applicant NIPD GENETICS PUBLIC COMPANY LIMITED		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 6 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- the international application in the language in which it was filed
 a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. _____
 as suggested by the applicant
 as selected by this Authority, because the applicant failed to suggest a figure
 as selected by this Authority, because this figure better characterizes the invention
- b. none of the figures is to be published with the abstract

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
2. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

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A. CLASSIFICATION OF SUBJECT MATTER
INV. C12Q1/6806 C12Q1/6883 C12Q1/6886
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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2014/130890 A1 (TOMA BIOSCIENCES INC [US]) 28 August 2014 (2014-08-28) paragraph [0540]; claims 1-5; examples 15,16 -----	1-28
Y	WO 2012/092426 A1 (FOUNDATION MEDICINE INC [US]; DOWNING SEAN R [US]; JAROSZ MIRNA [US];) 5 July 2012 (2012-07-05) page 95; claims 1-11; example 13 -----	1-28
Y	WO 2016/189388 A1 (NIPD GENETICS LTD [CY]) 1 December 2016 (2016-12-01) claims 1,5-22 -----	1-28
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 4 October 2018	Date of mailing of the international search report 22/10/2018
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 Gabriels, Jan

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ERIC J DUNCAVAGE ET AL: "Targeted next generation sequencing of clinically significant gene mutations and translocations in leukemia", MODERN PATHOLOGY, vol. 25, no. 6, 16 March 2012 (2012-03-16), pages 795-804, XP055235397, GB ISSN: 0893-3952, DOI: 10.1038/modpathol.2012.29 table 1	1-28
Y	----- EP 2 902 500 A1 (NATERA INC [US]) 5 August 2015 (2015-08-05) paragraph [0150] - paragraph [0163]	1-28
Y	----- US 2017/051355 A1 (ZIMMERMANN BERNHARD [US] ET AL) 23 February 2017 (2017-02-23) paragraph [0303] - paragraph [0306]; claim 1	1-28
Y	----- US 2015/203907 A1 (GILBERT DAVID M [US] ET AL) 23 July 2015 (2015-07-23) paragraph [0129]; figure 2	1-28
Y	----- US 2011/039304 A1 (CHURCH GEORGE M [US] ET AL) 17 February 2011 (2011-02-17) example 1	1-28
Y	----- US 2008/194414 A1 (ALBERT THOMAS J [US] ET AL) 14 August 2008 (2008-08-14) paragraph [0062]	1-28
Y	----- WO 2016/024134 A2 (OXFORD GENE TECHNOLOGY OPERATIONS LTD [GB]) 18 February 2016 (2016-02-18) page 5	1-28
Y	----- US 2016/068889 A1 (GOLE JEFF [US] ET AL) 10 March 2016 (2016-03-10) paragraph [0057]	1-28
Y	----- XI LIN ET AL: "Applications of targeted gene capture and next-generation sequencing technologies in studies of human deafness and other genetic disabilities", HEARING RESEARCH, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 288, no. 1, 6 January 2012 (2012-01-06), pages 67-76, XP028519246, ISSN: 0378-5955, DOI: 10.1016/J.HEARES.2012.01.004 [retrieved on 2012-01-14] page 69, left-hand column	1-28

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Information on patent family members

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