

84/116

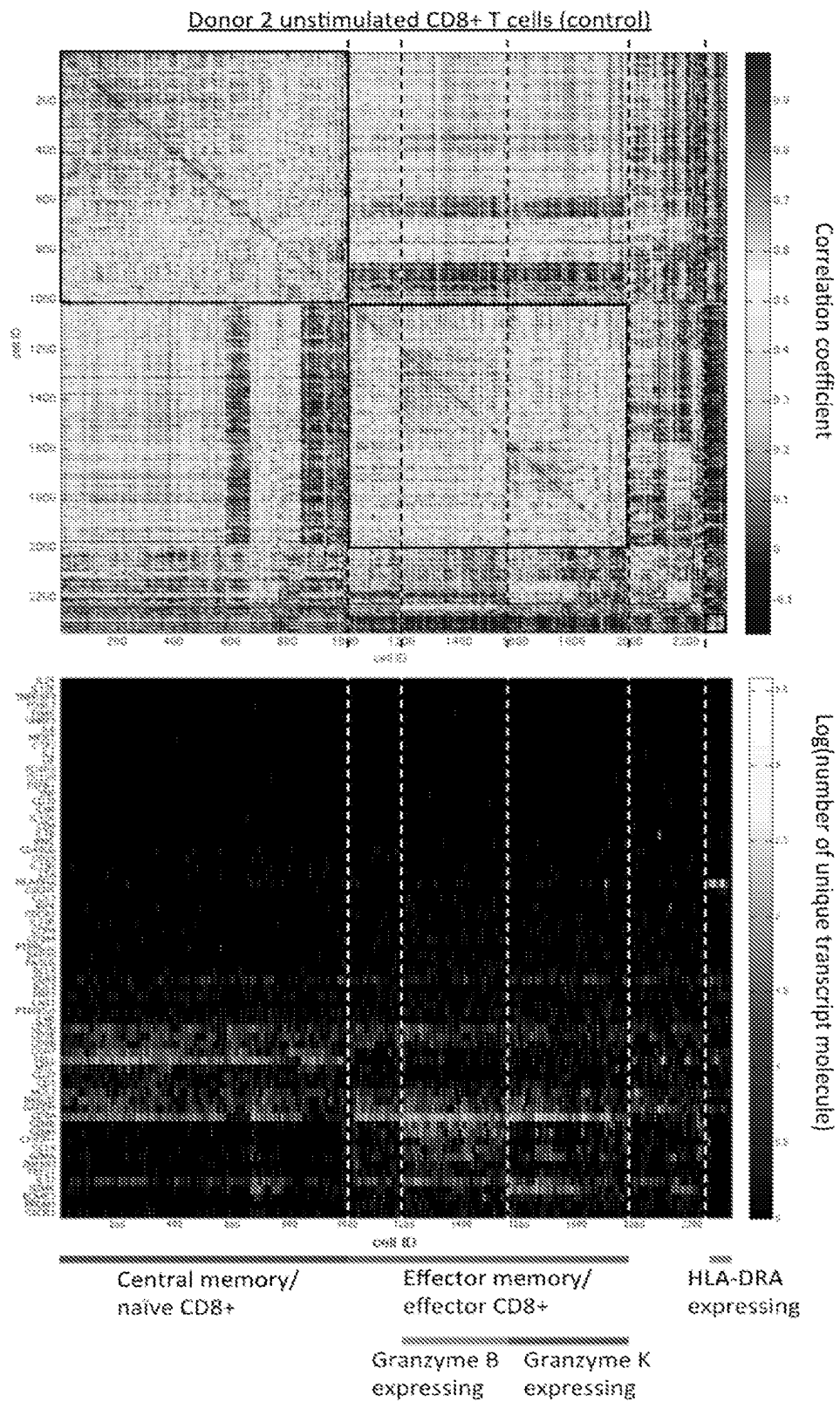


FIG. 50A

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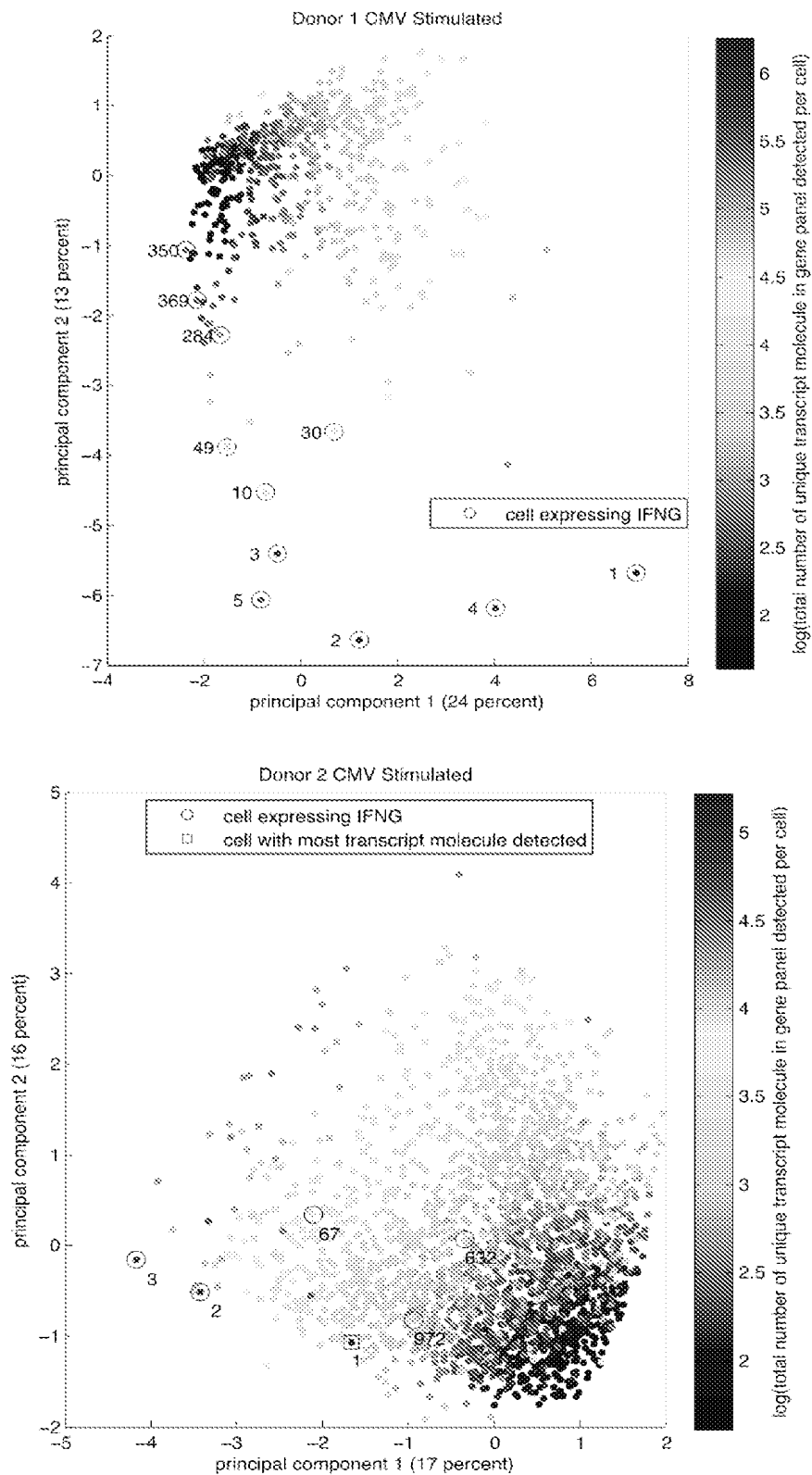


FIG. 50B

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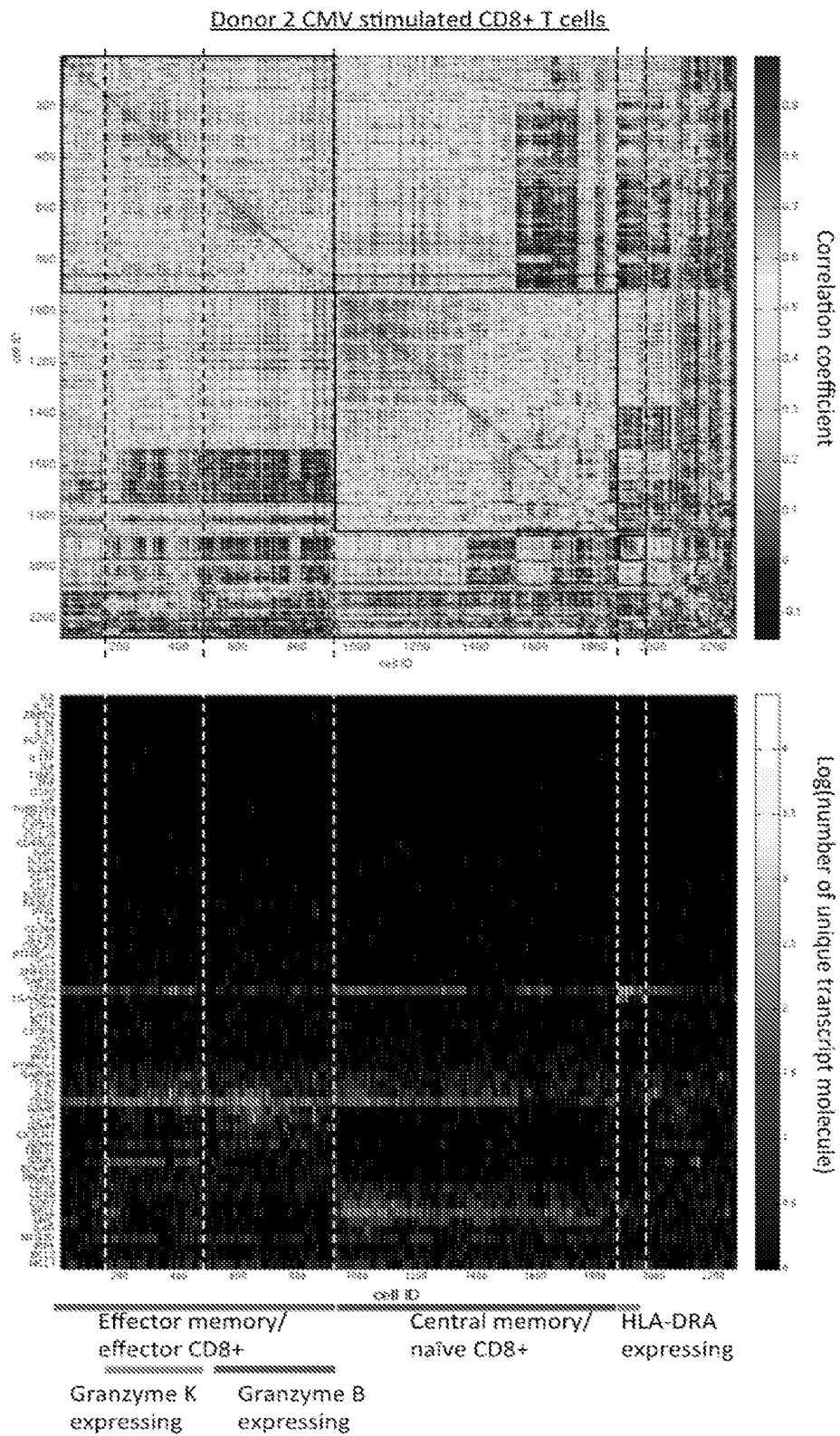


FIG. 51

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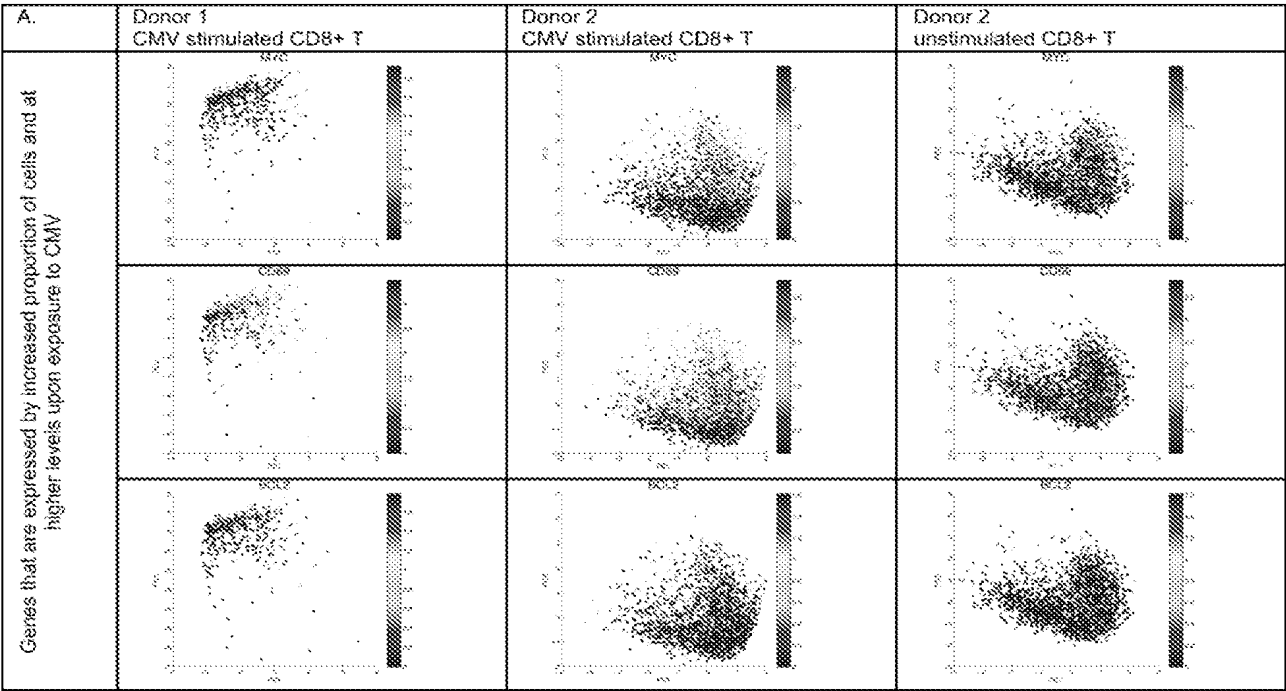


FIG. 52A

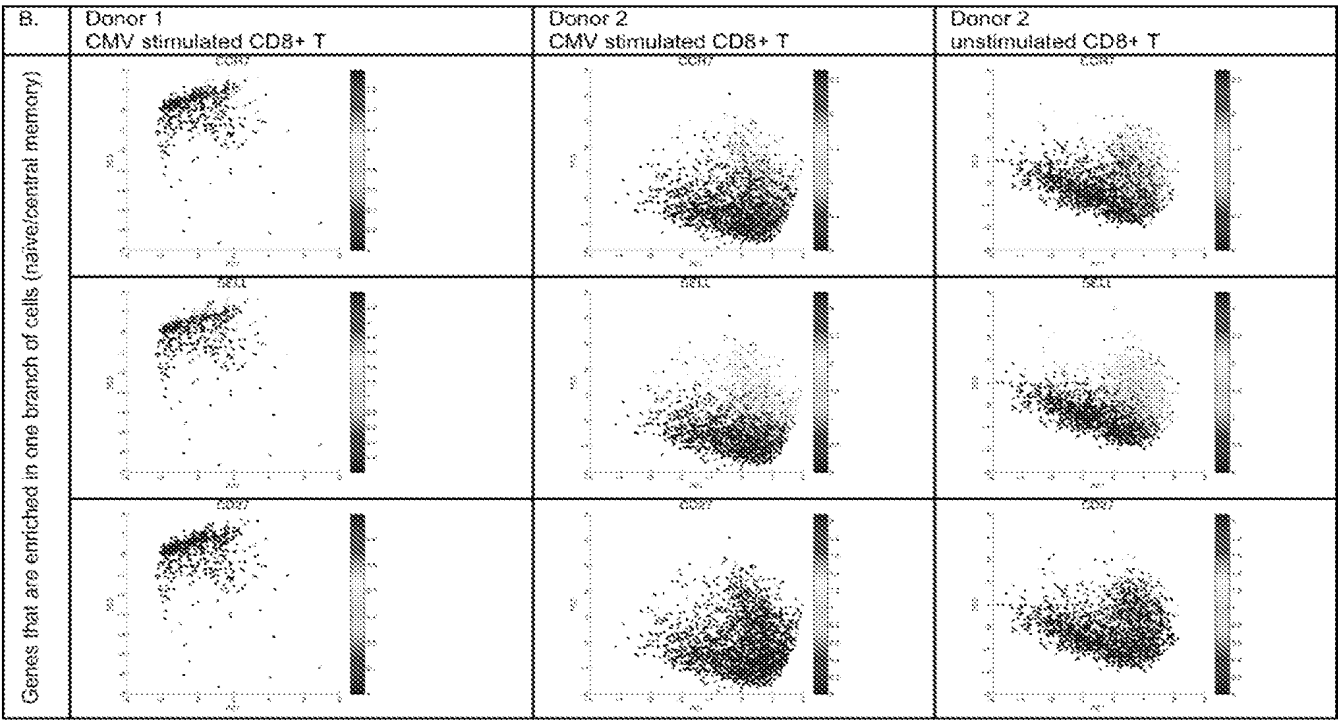


FIG. 52B

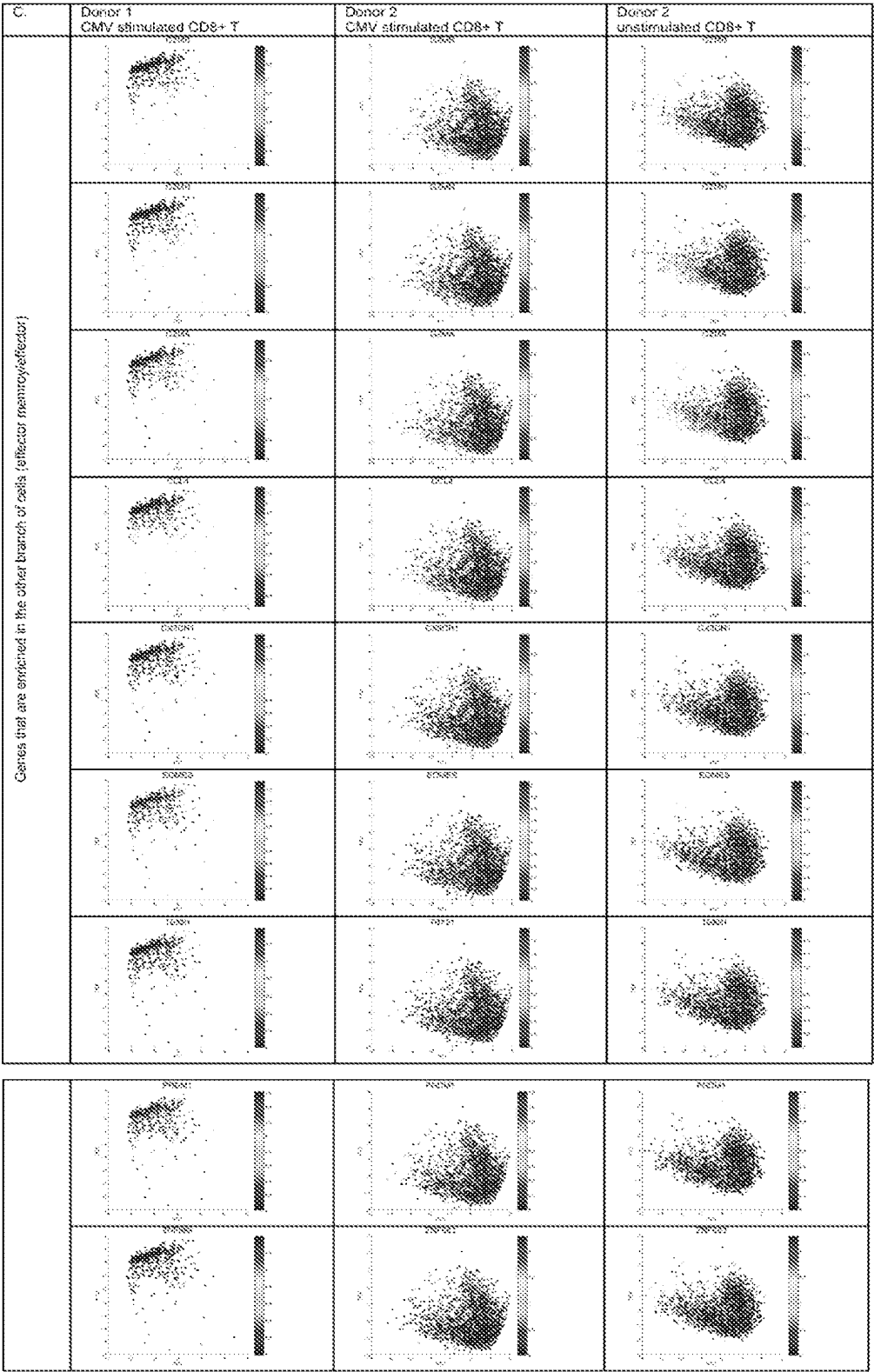


FIG. 52C

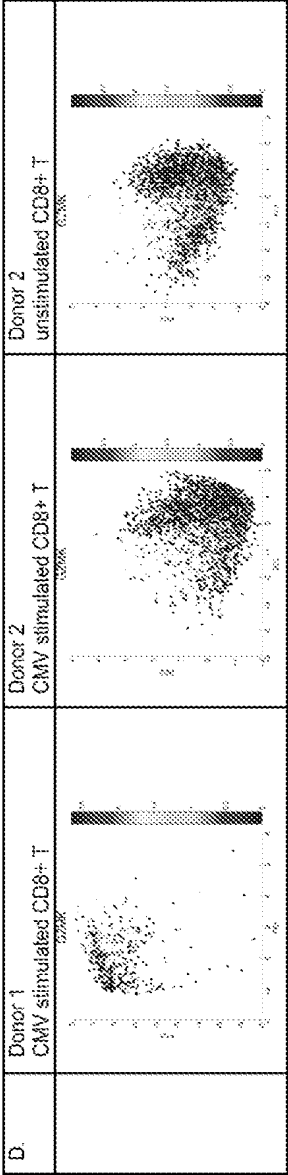


FIG. 52D

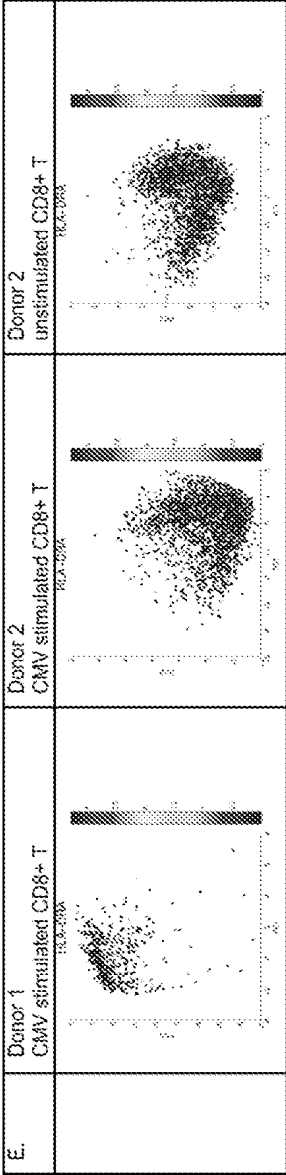


FIG. 52E

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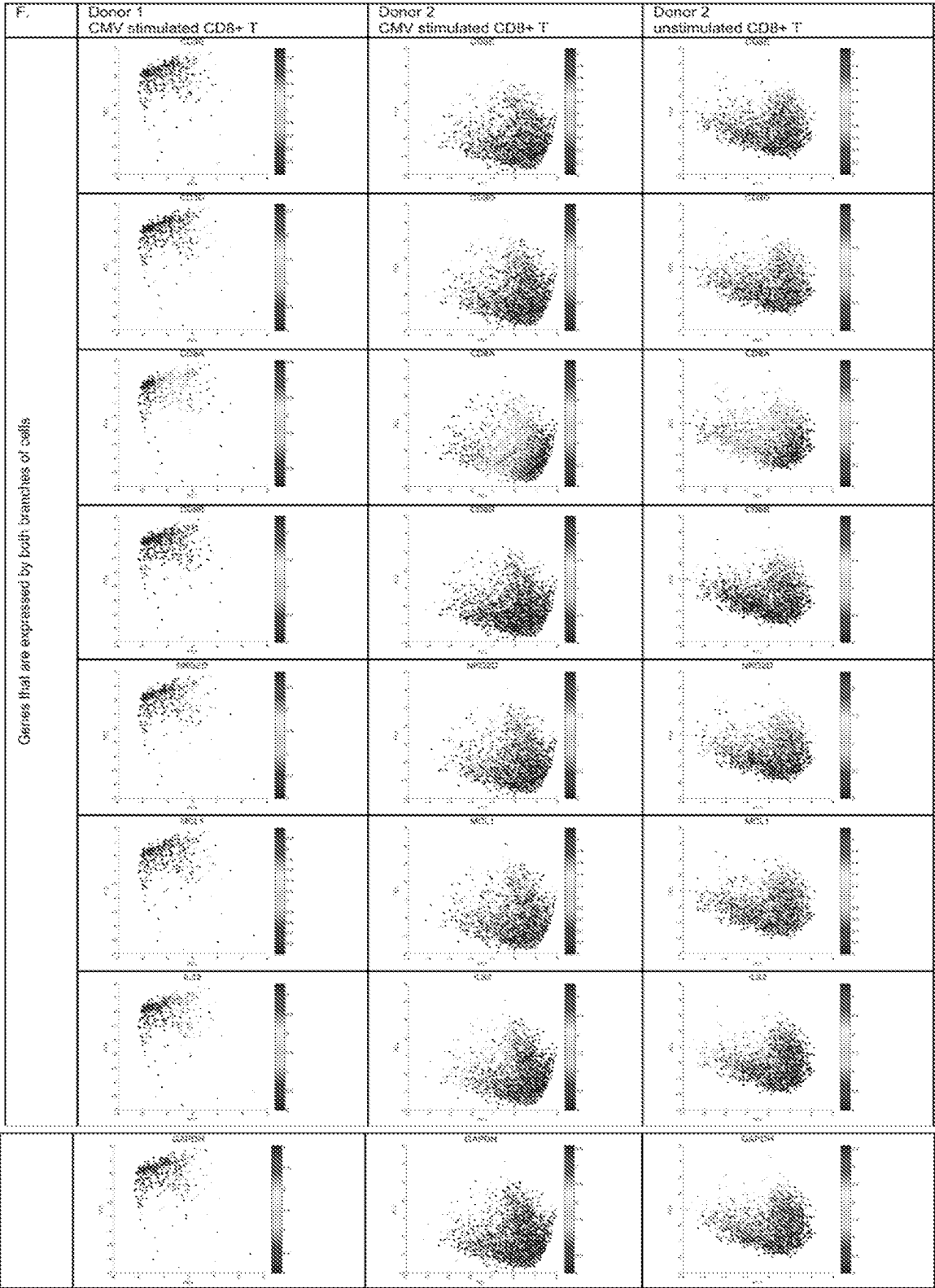


FIG. 52F

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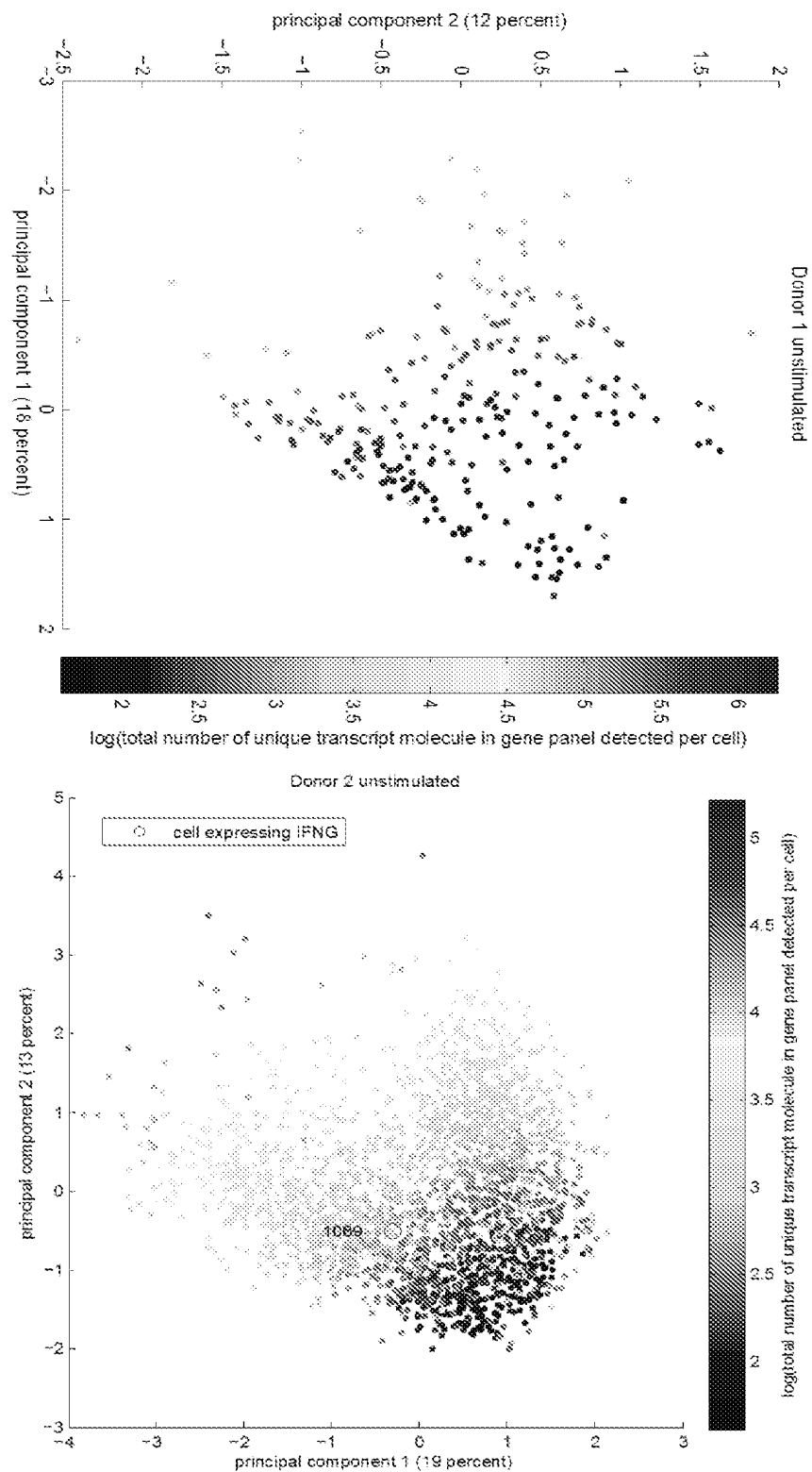


FIG. 53

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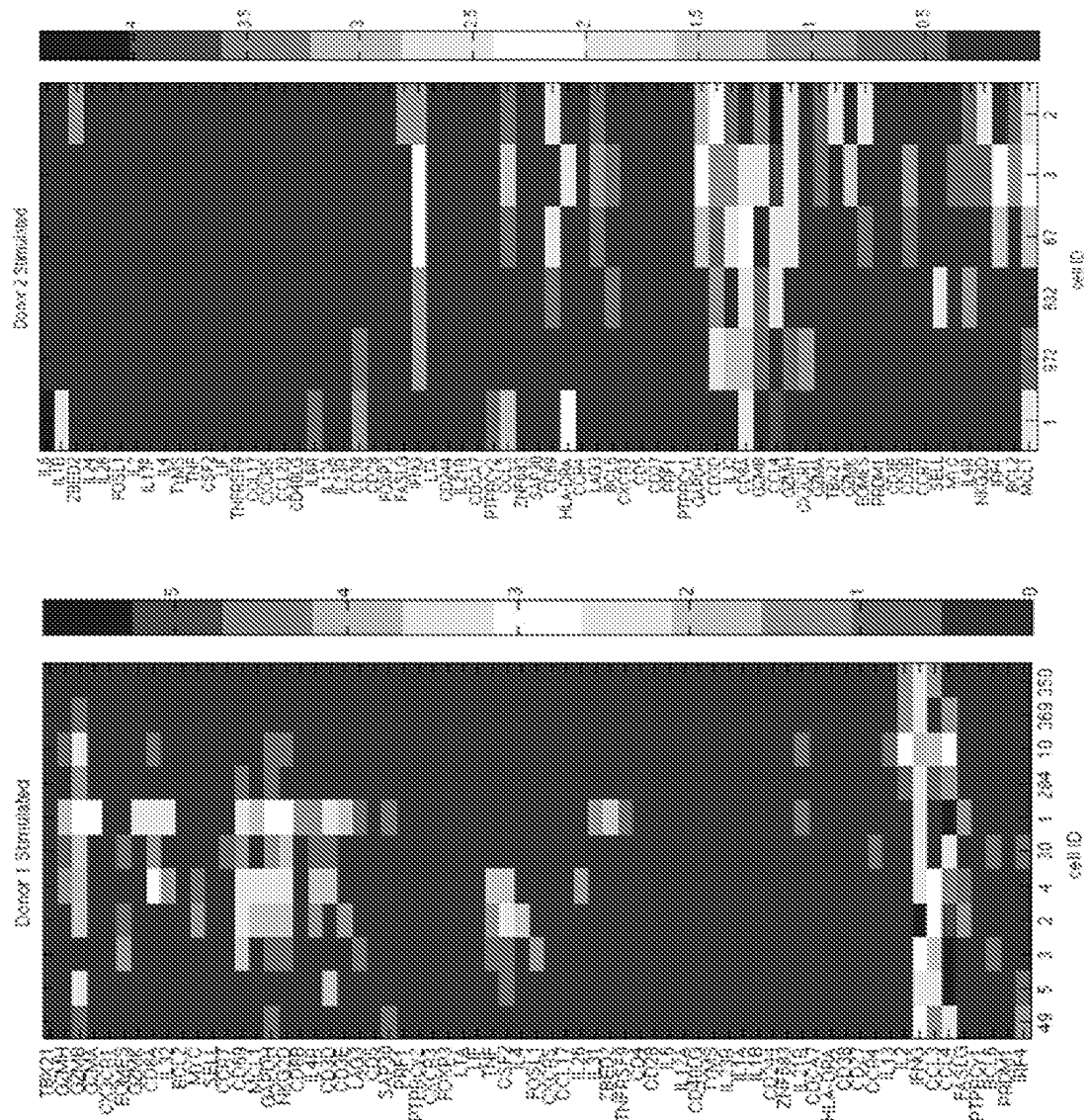


FIG. 54

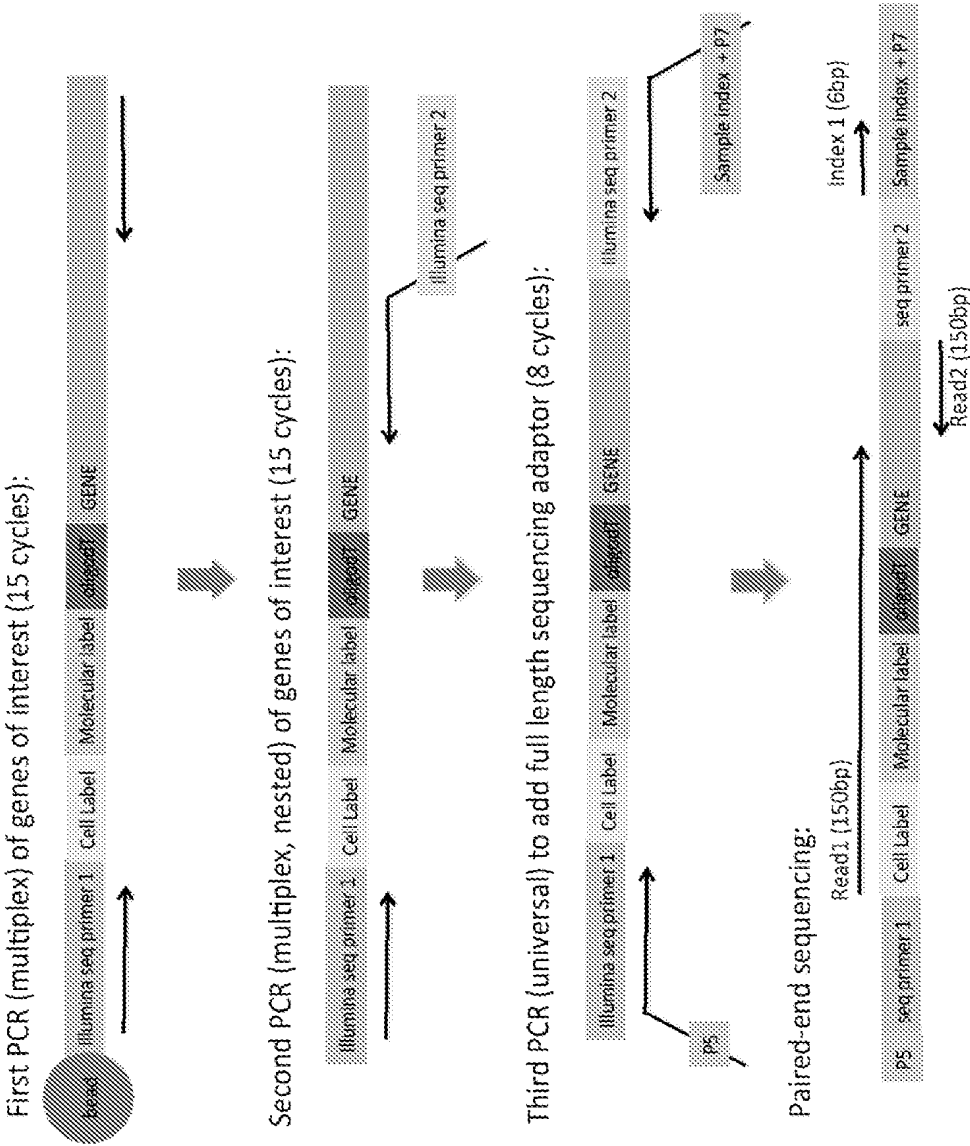
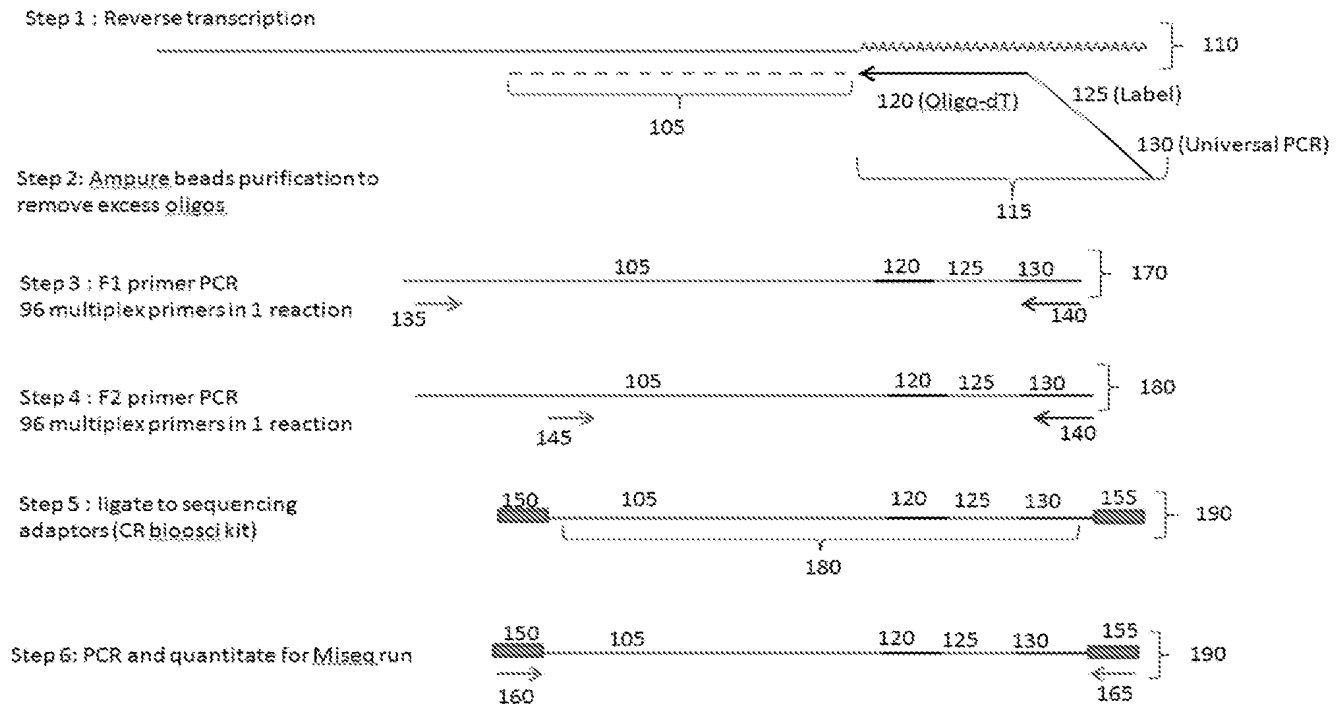
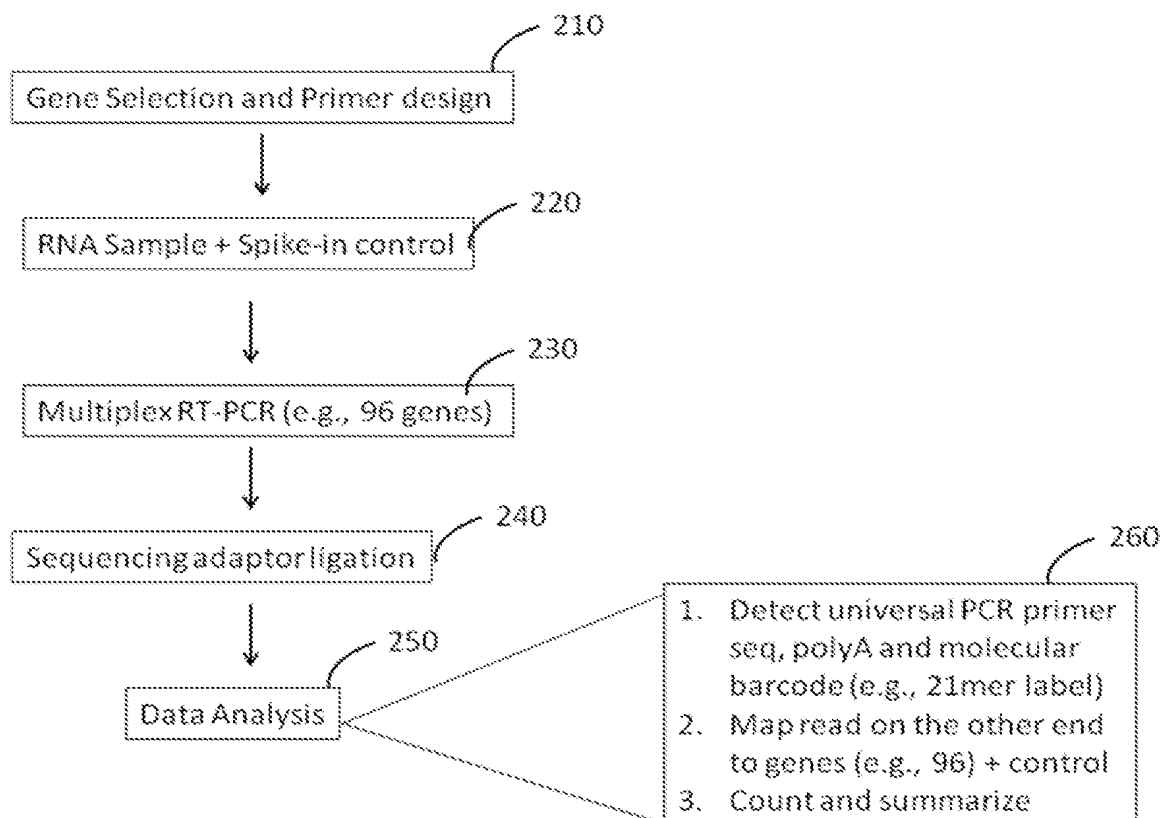
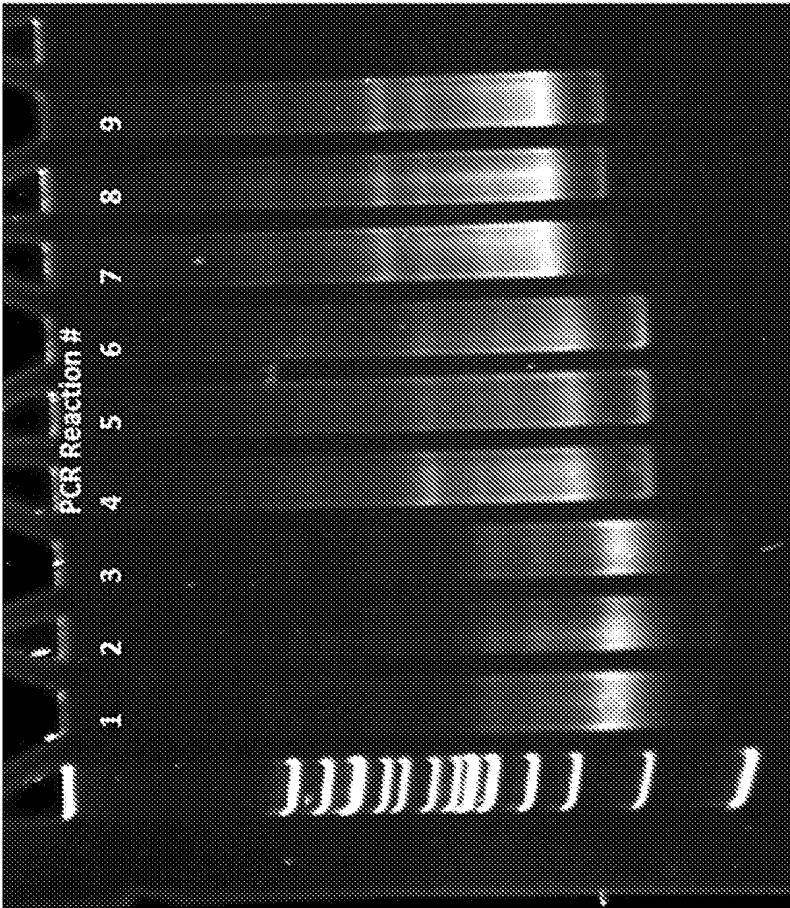
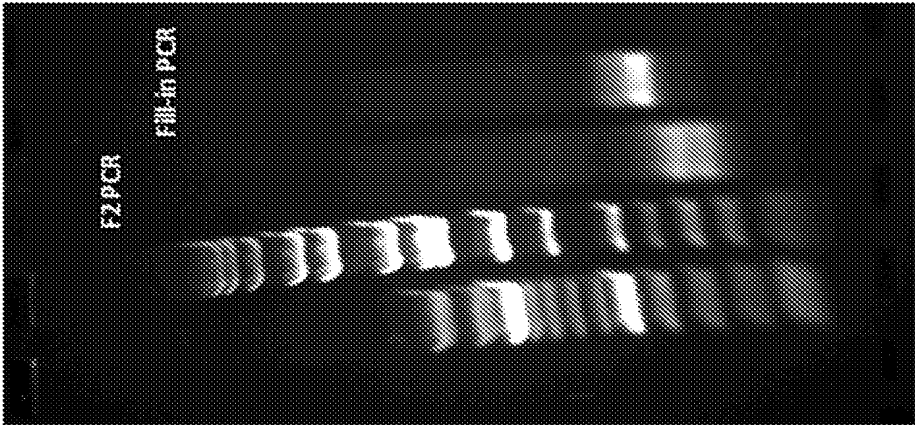


FIG. 55

94/116**FIG. 56****FIG. 57**



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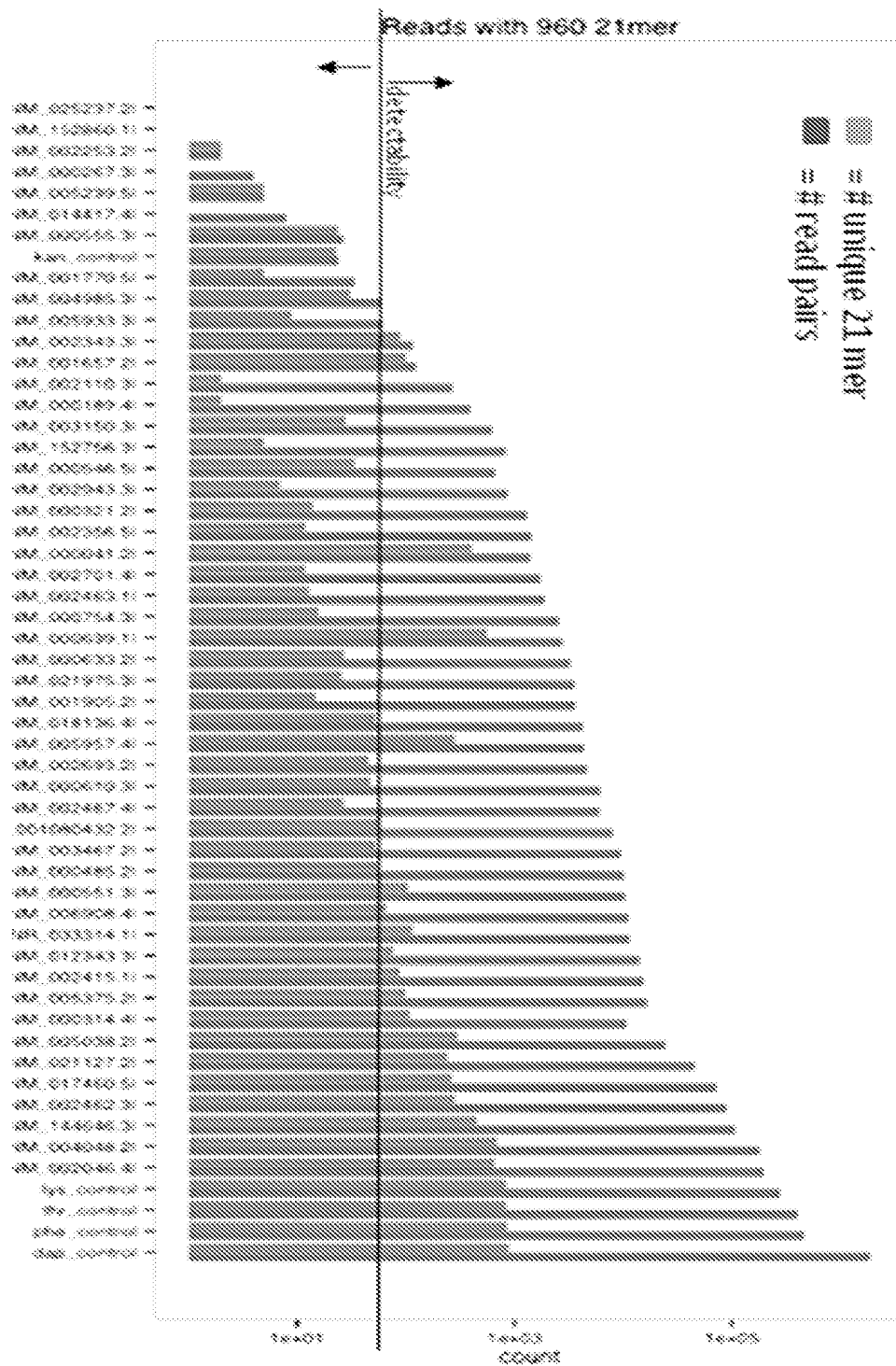
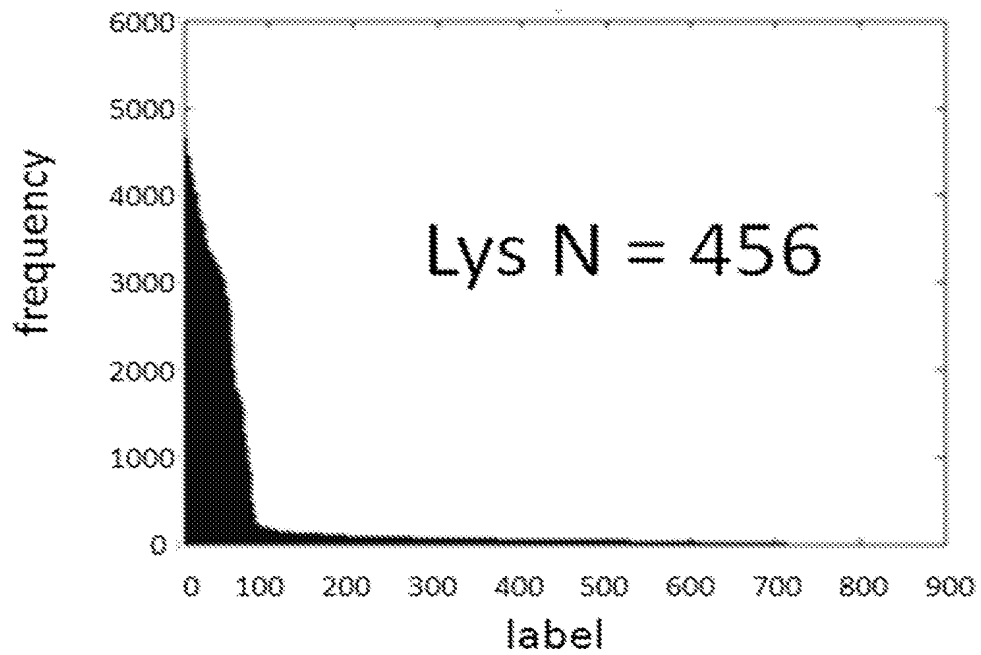
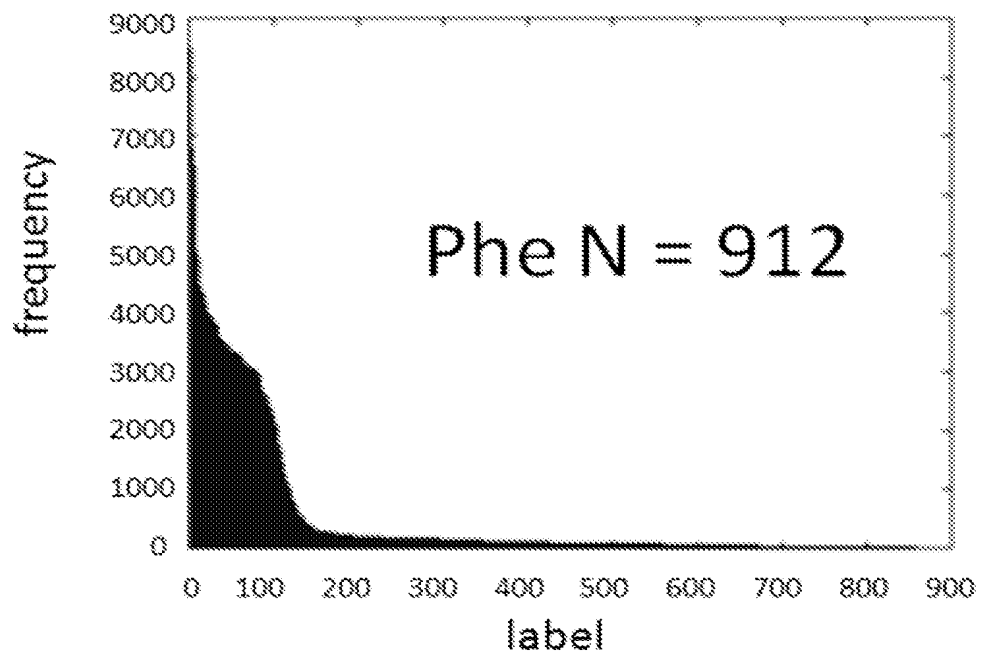
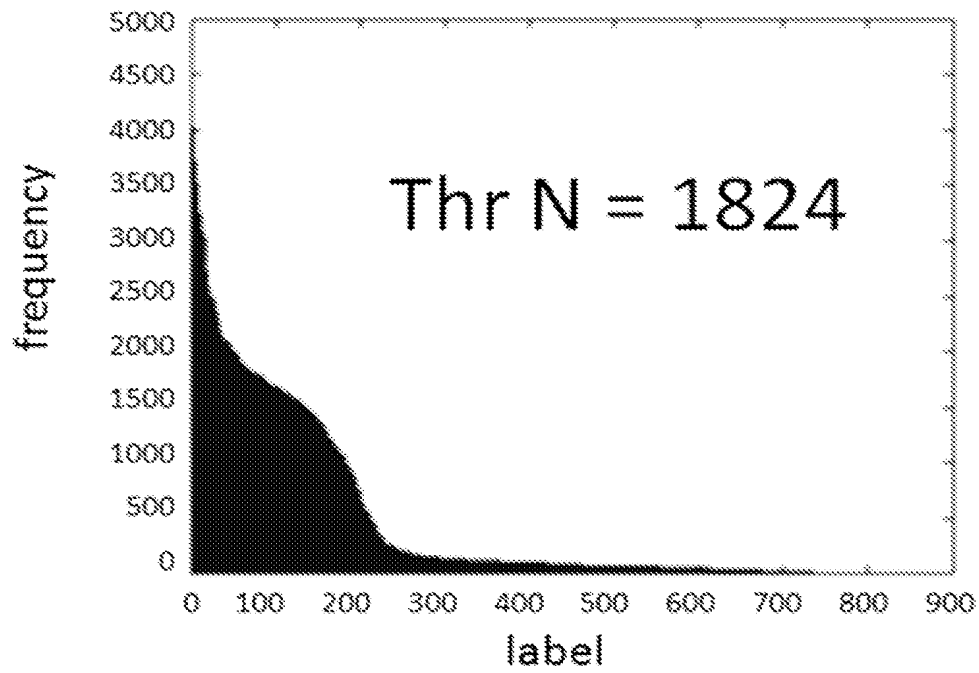
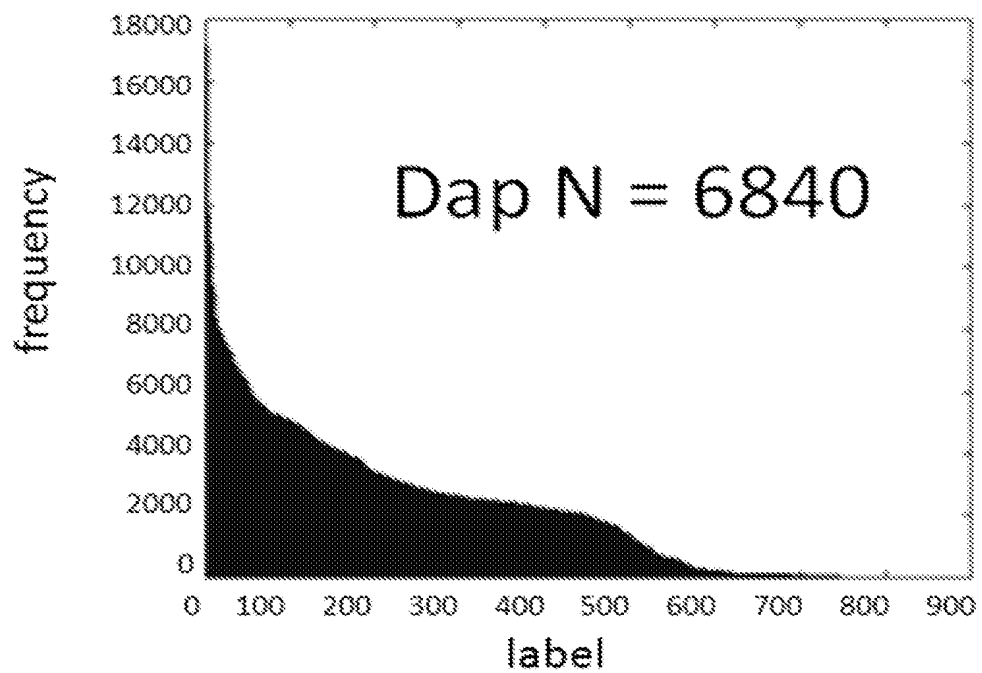
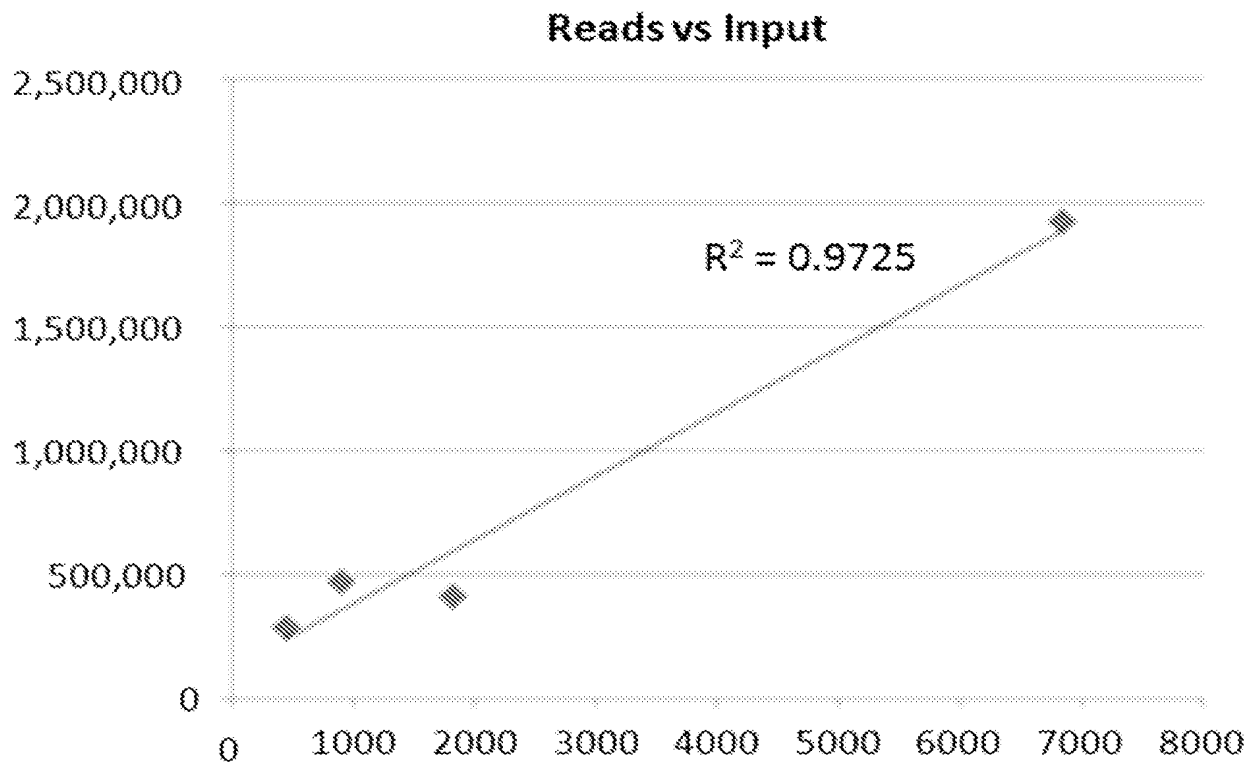
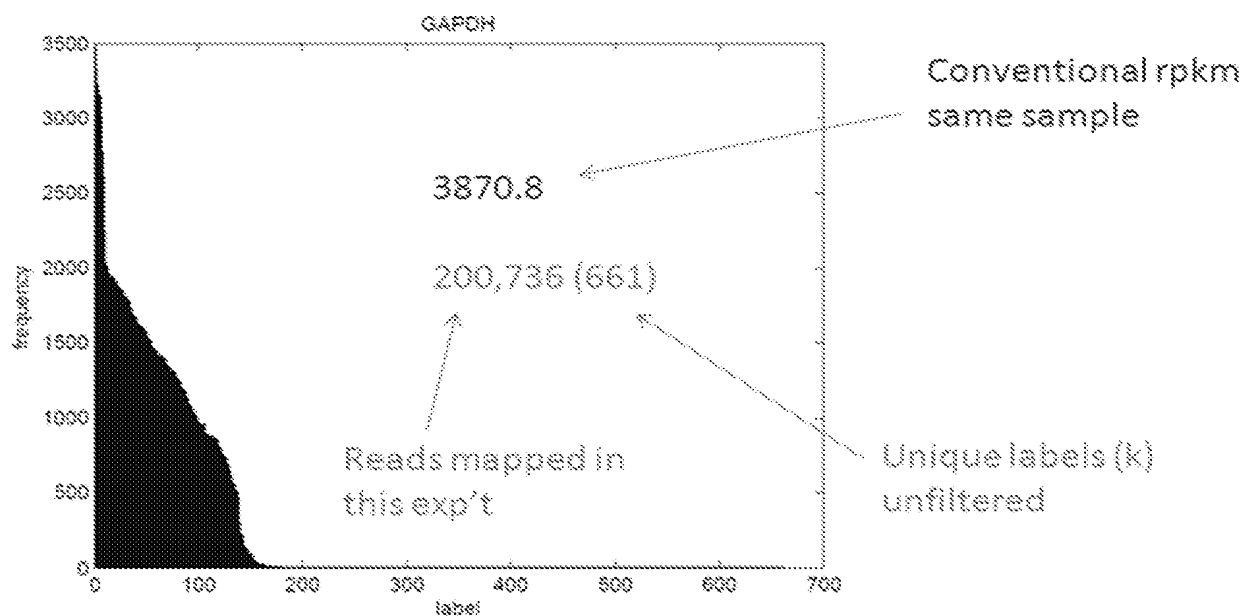


FIG. 59

97/116**FIG. 60A****FIG. 60B**

98/116**FIG. 60C****FIG. 60D**

99/116**FIG. 60E****FIG. 61**

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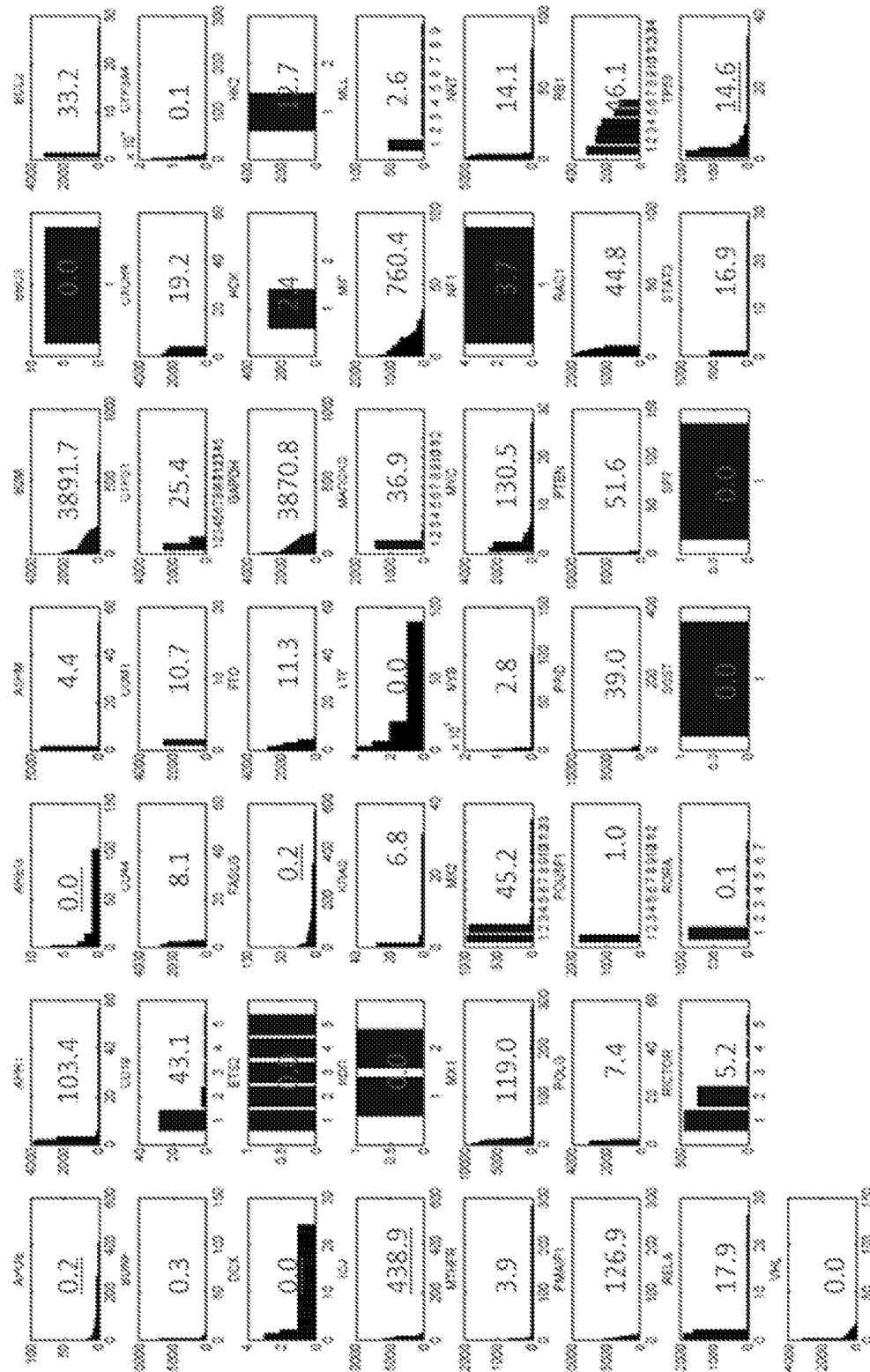


FIG. 62

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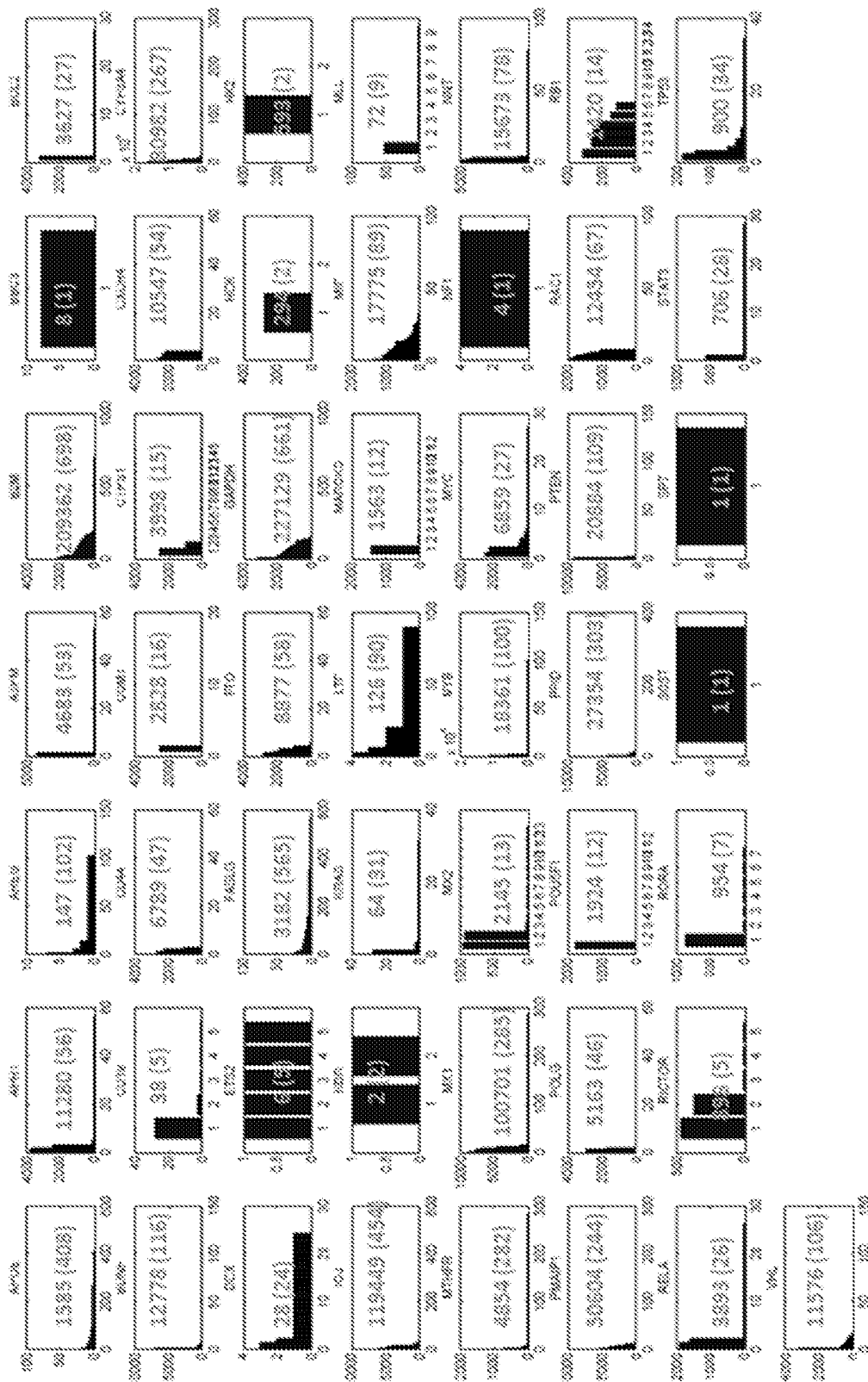


FIG. 63

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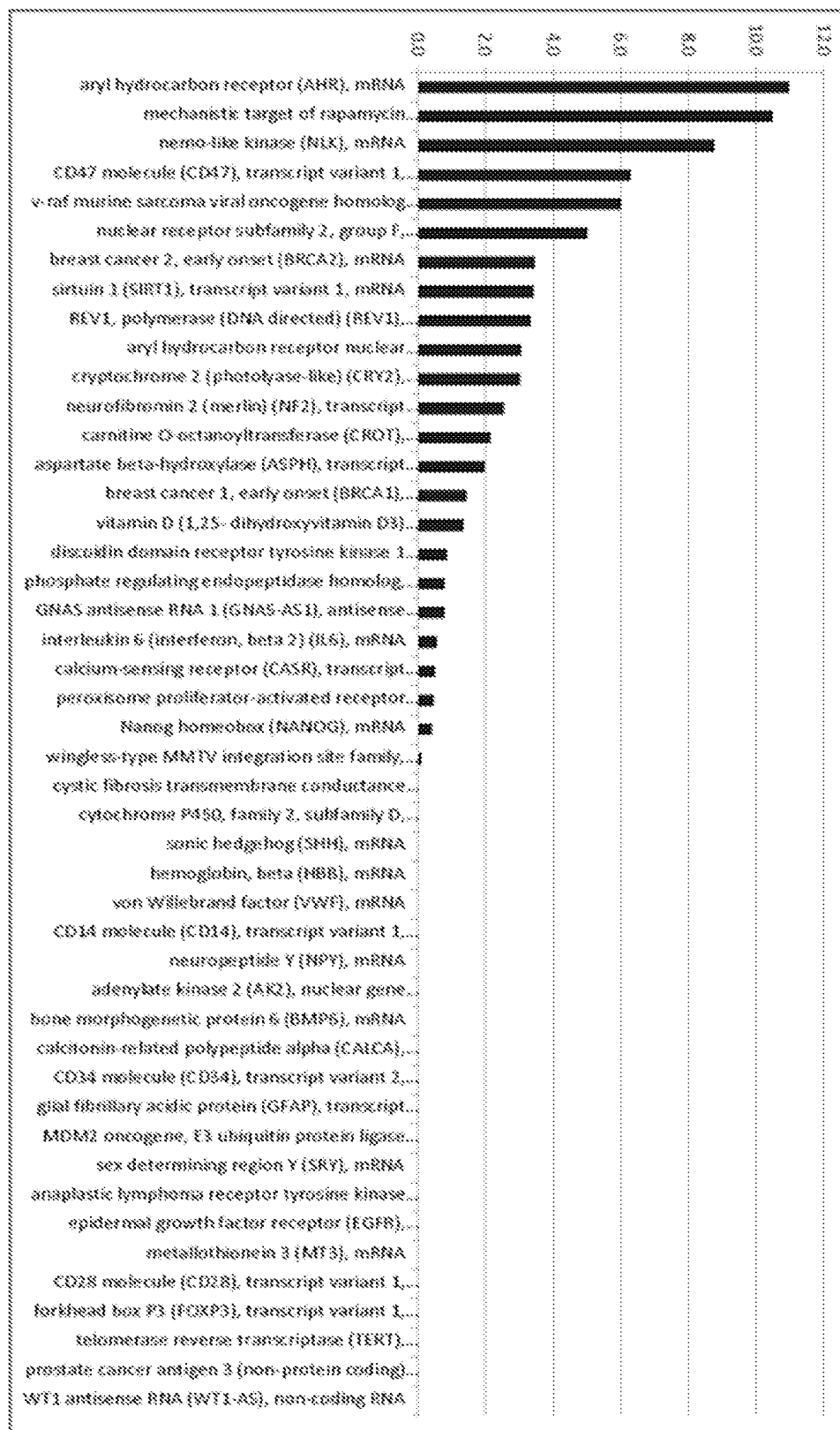


FIG. 64

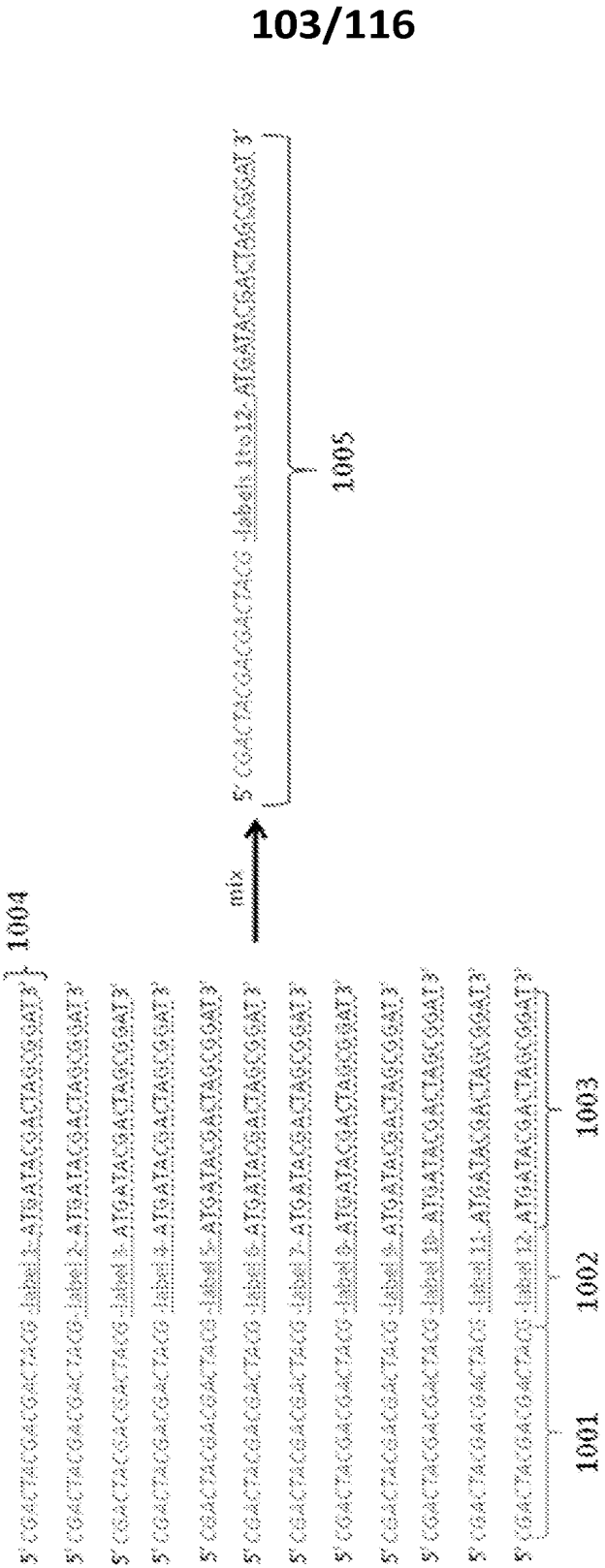


FIG. 65

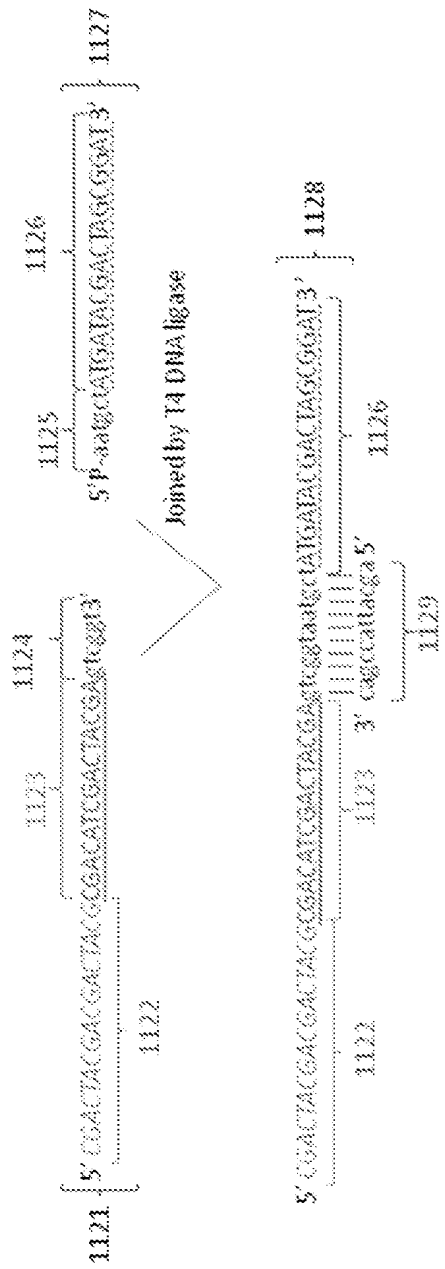


FIG. 66A

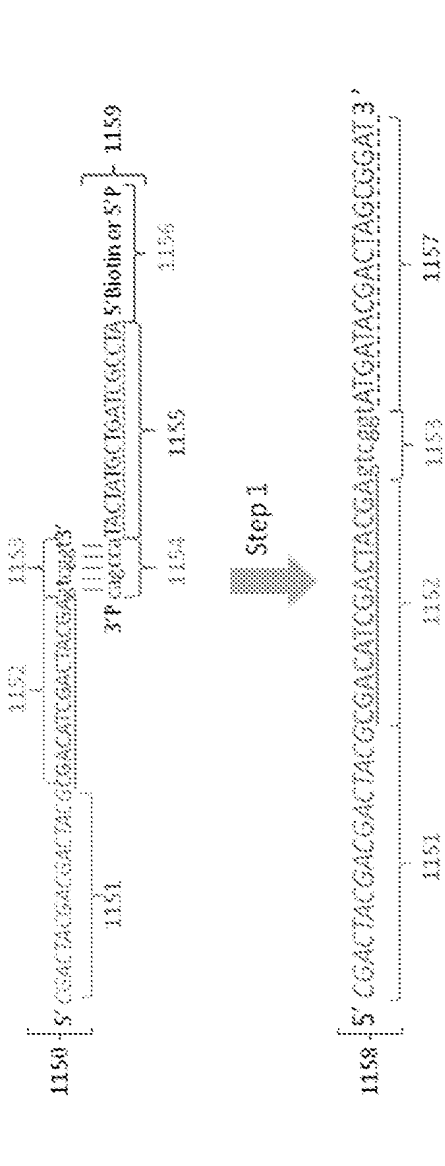


FIG. 66B

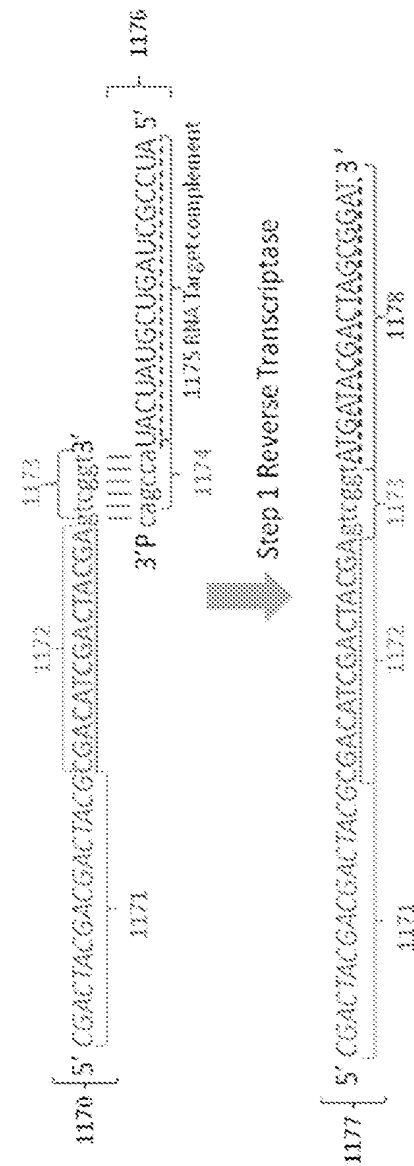


FIG. 66C

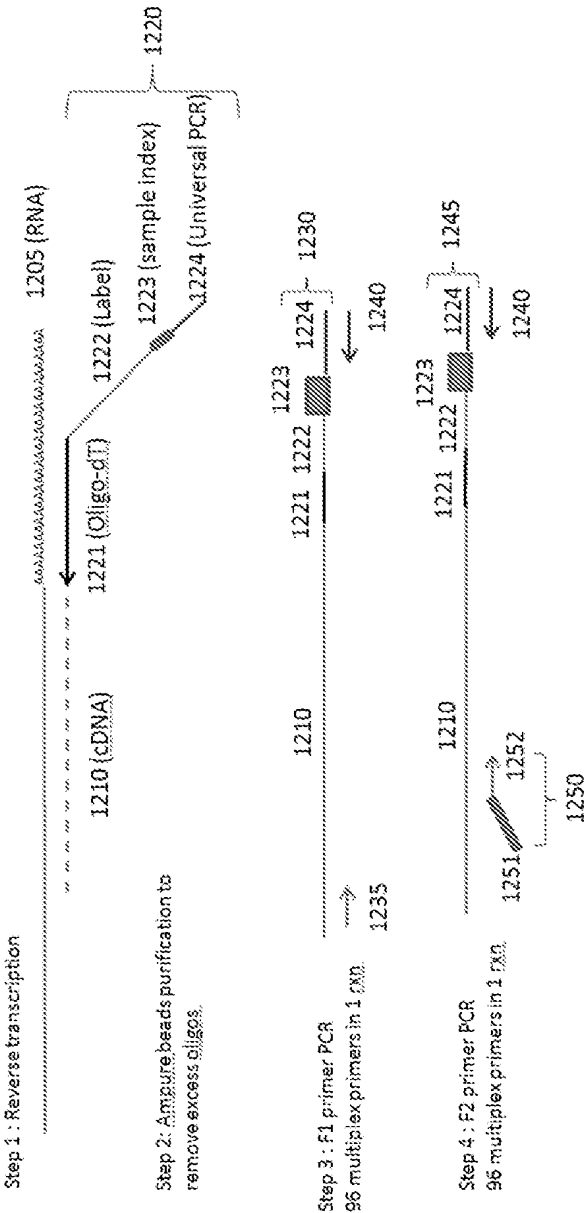


FIG. 67

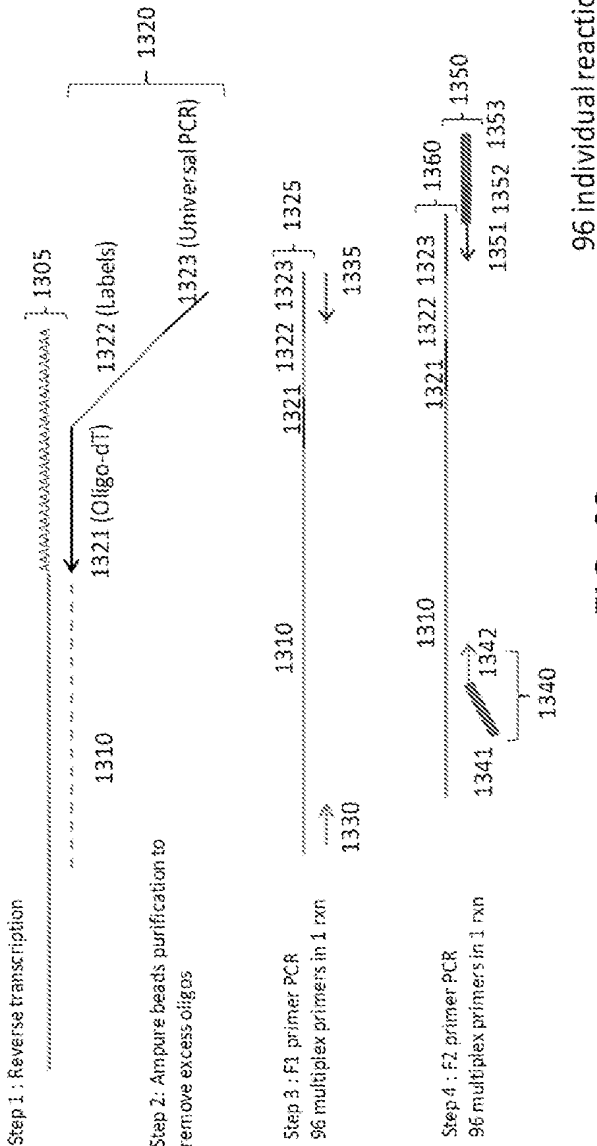


FIG. 68

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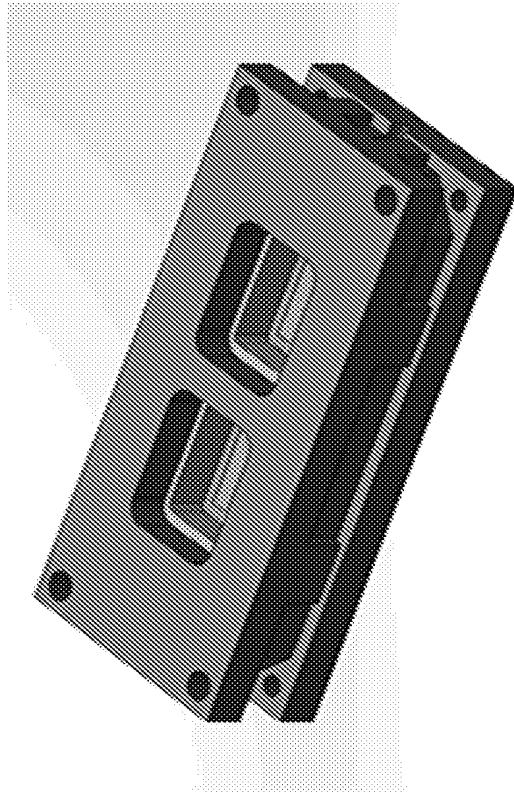


FIG. 70

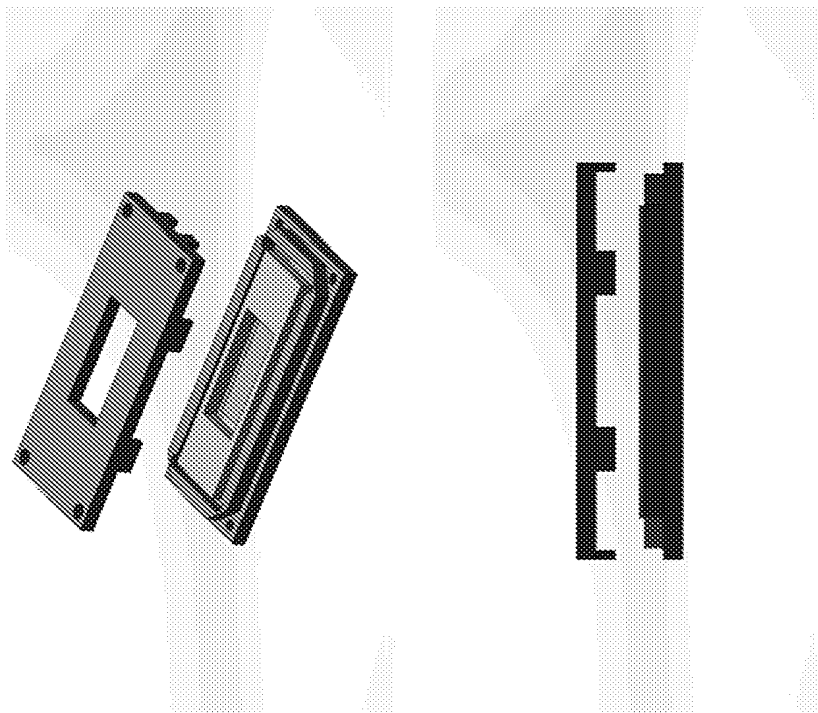


FIG. 69

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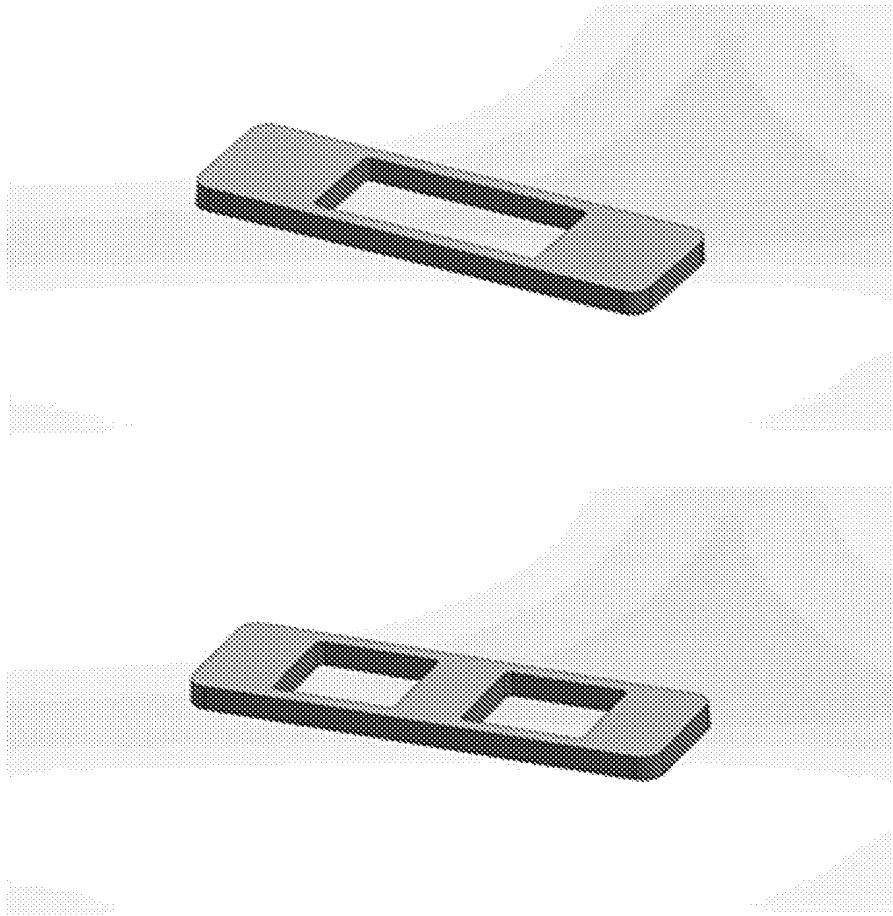


FIG. 71

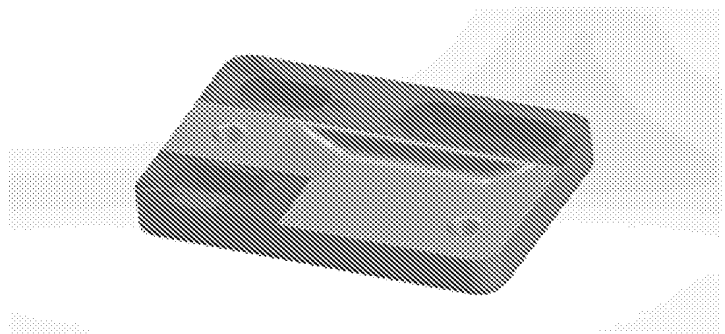
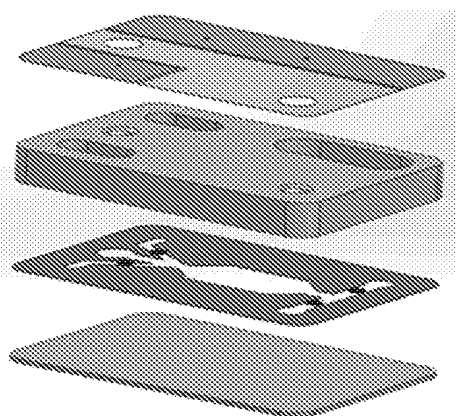


FIG. 72

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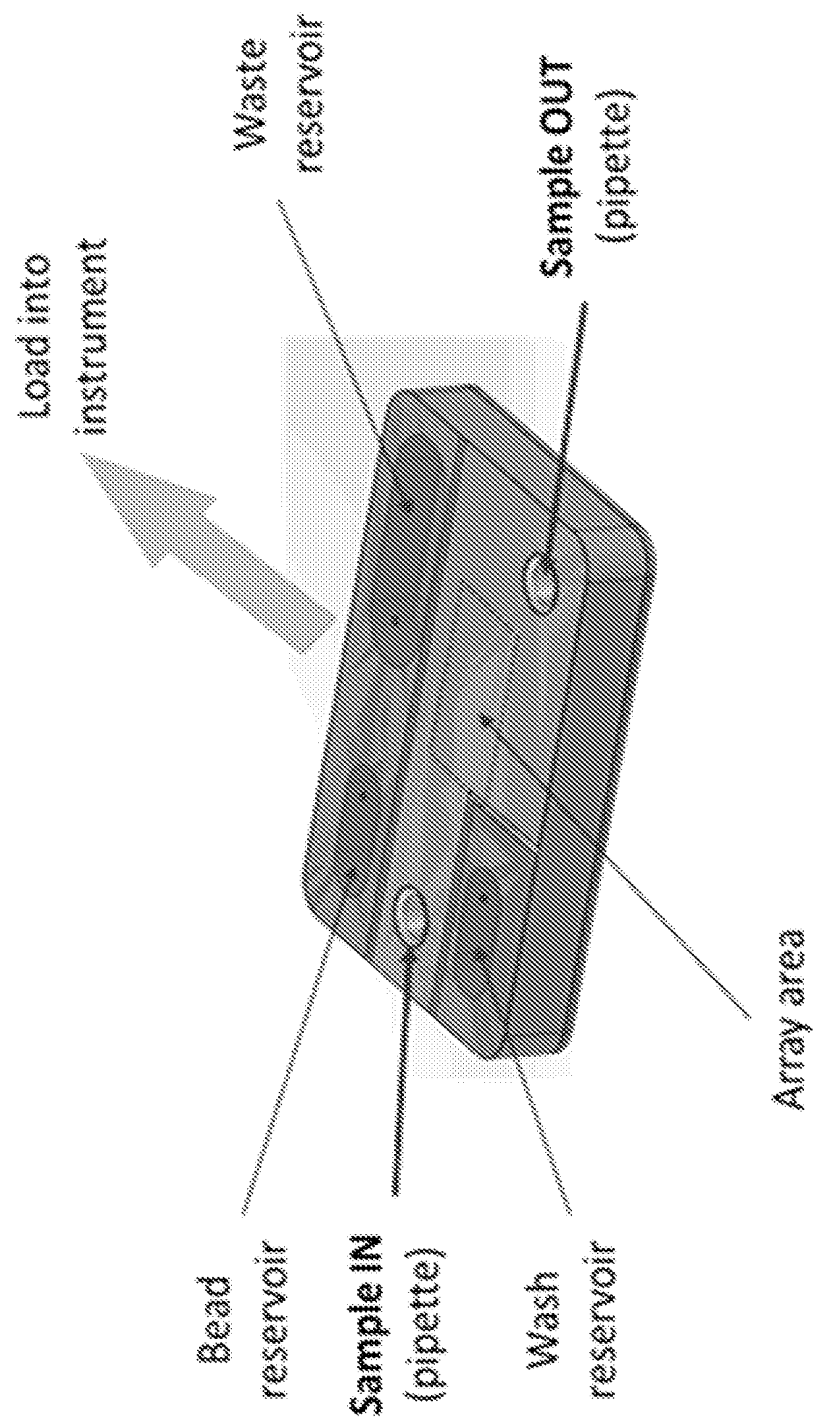


FIG. 73

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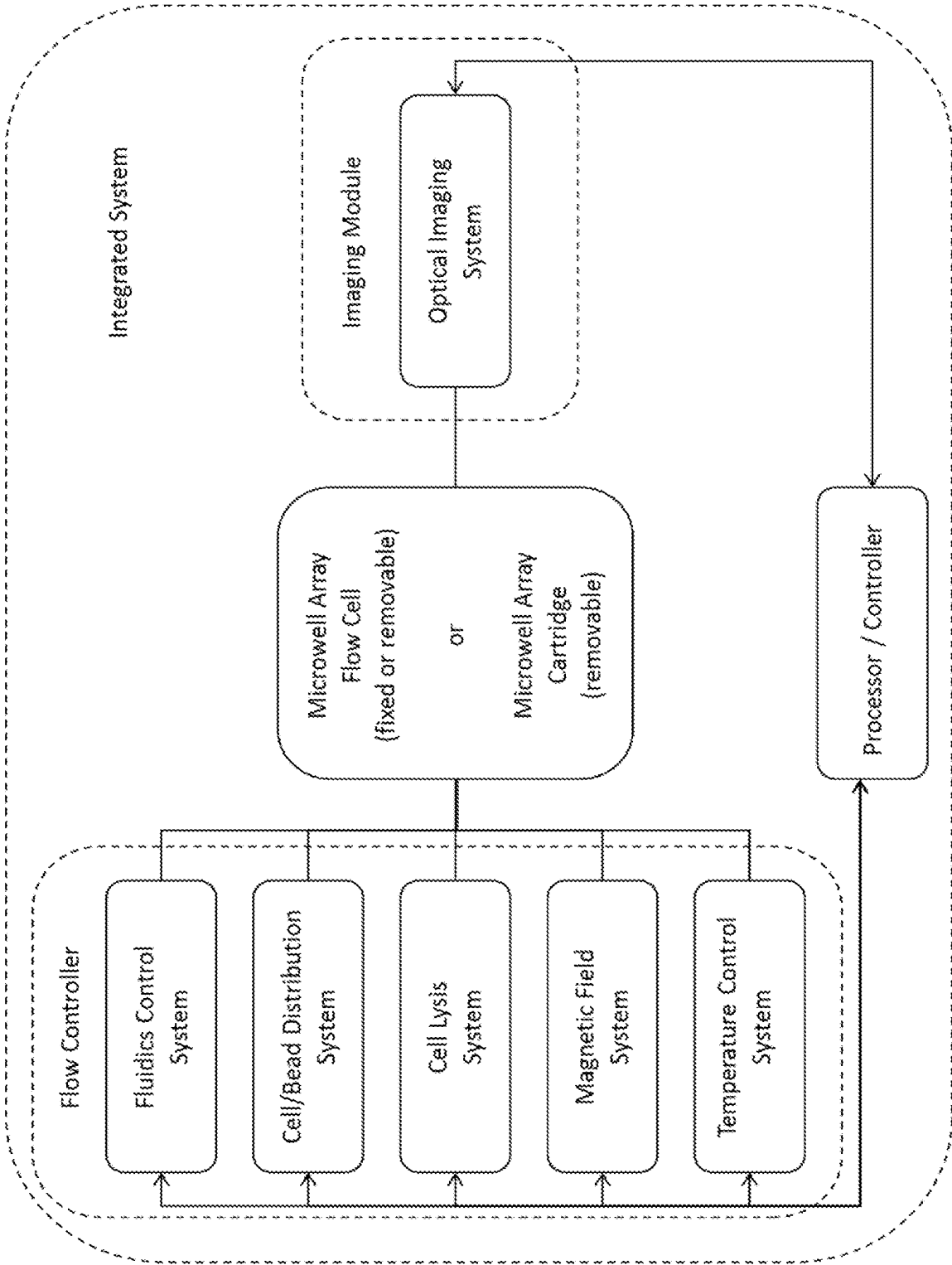


FIG. 74

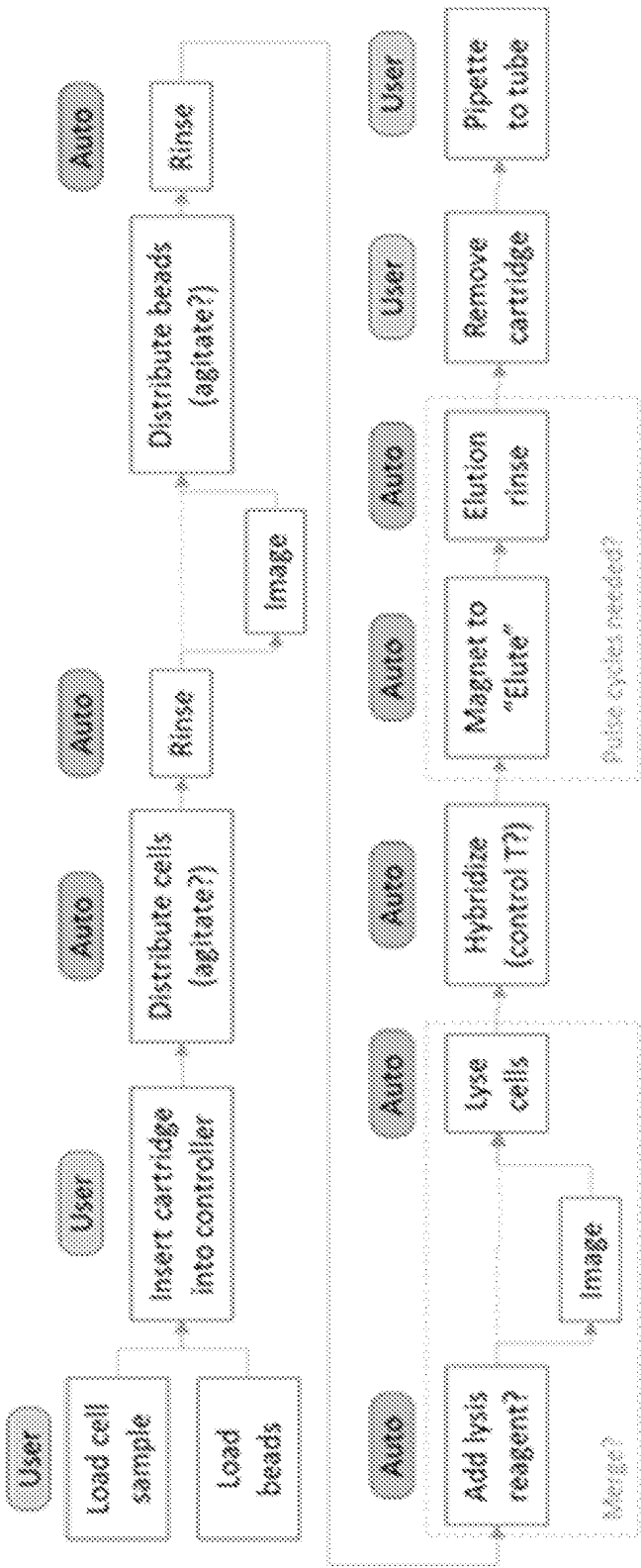


FIG. 75

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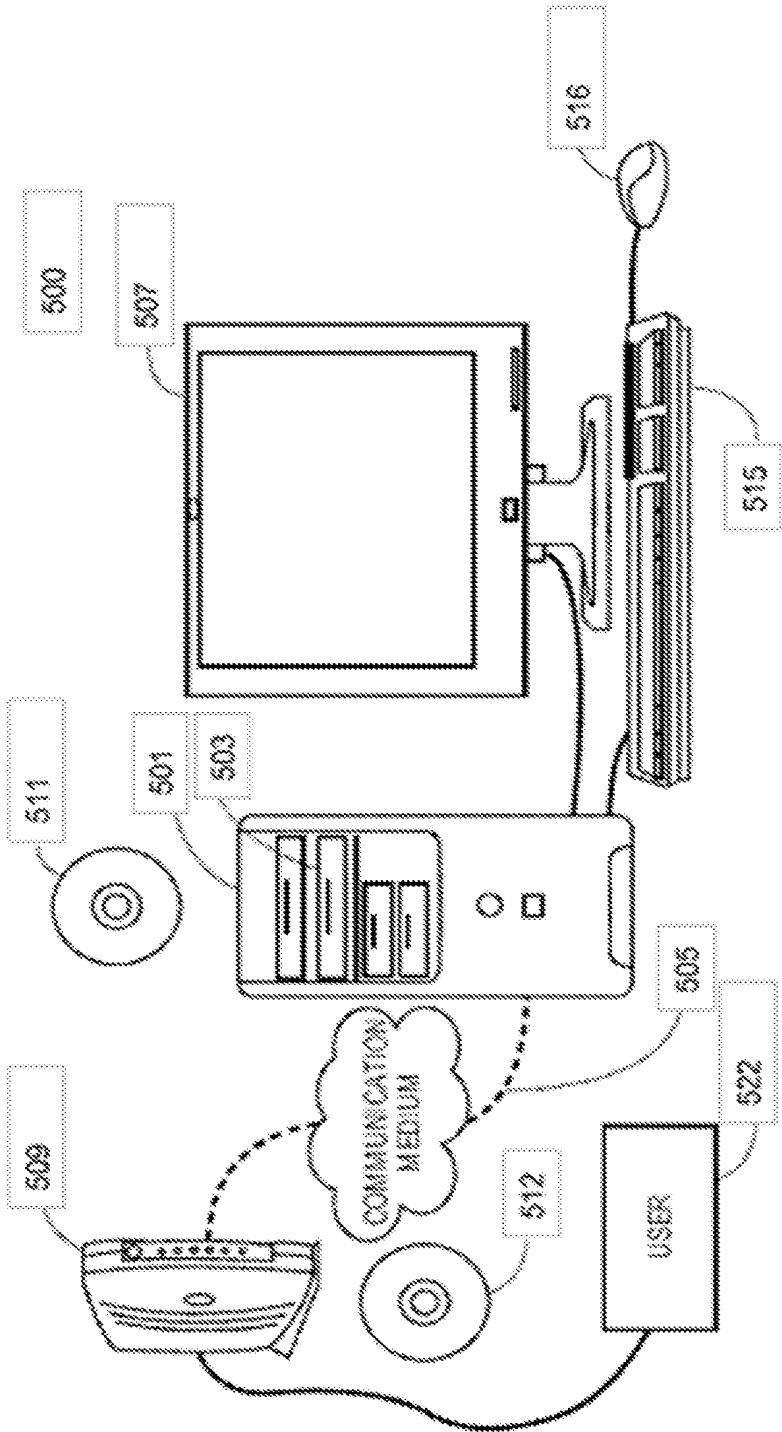


FIG. 76

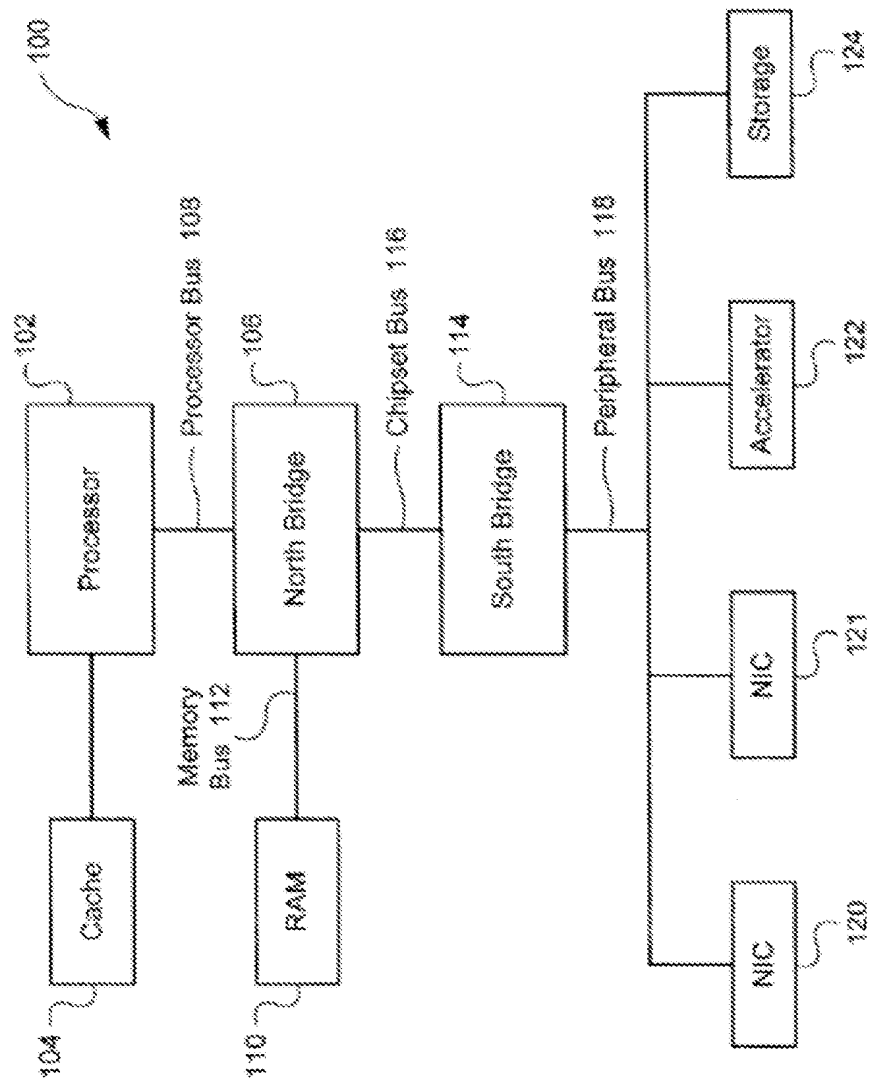


FIG. 77

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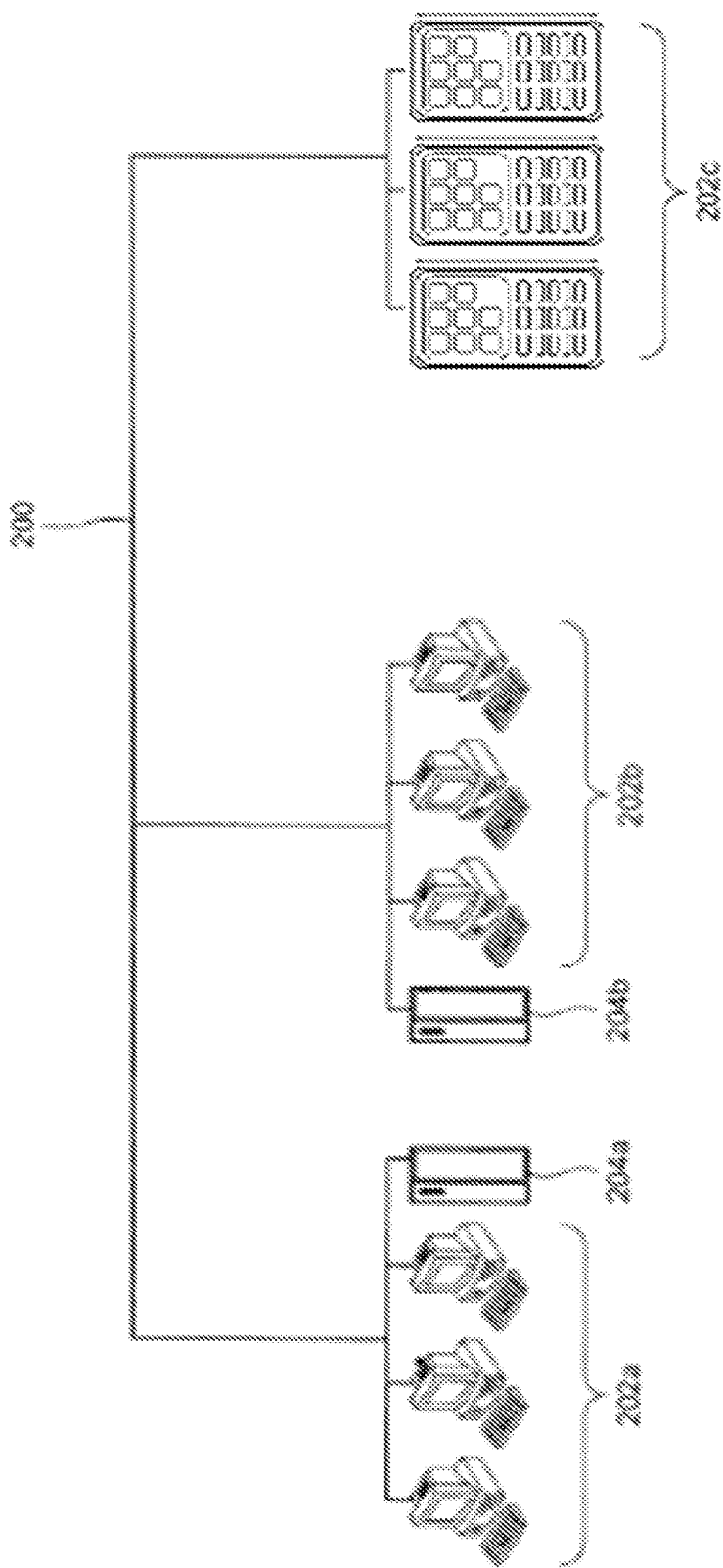


FIG. 78

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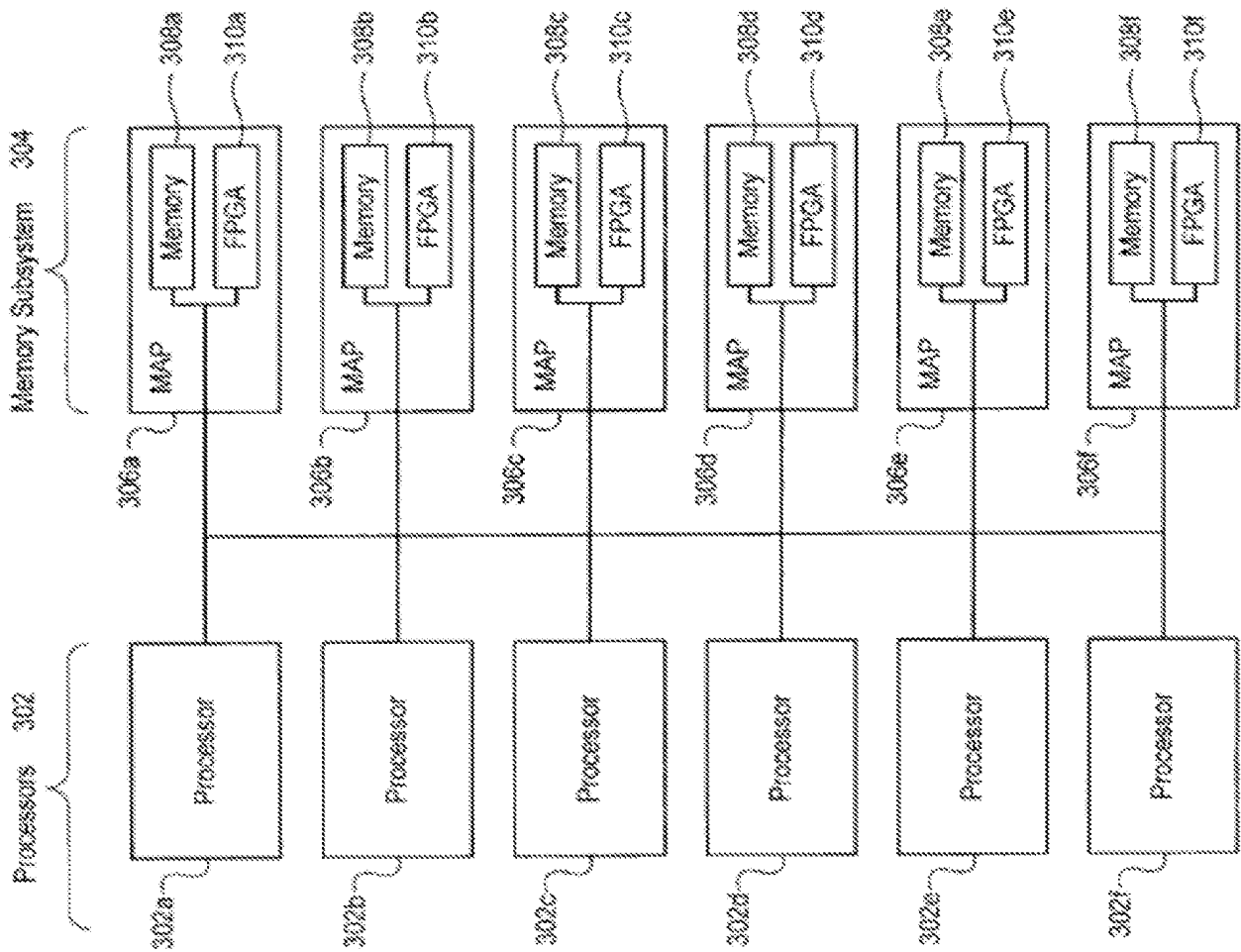


FIG. 79

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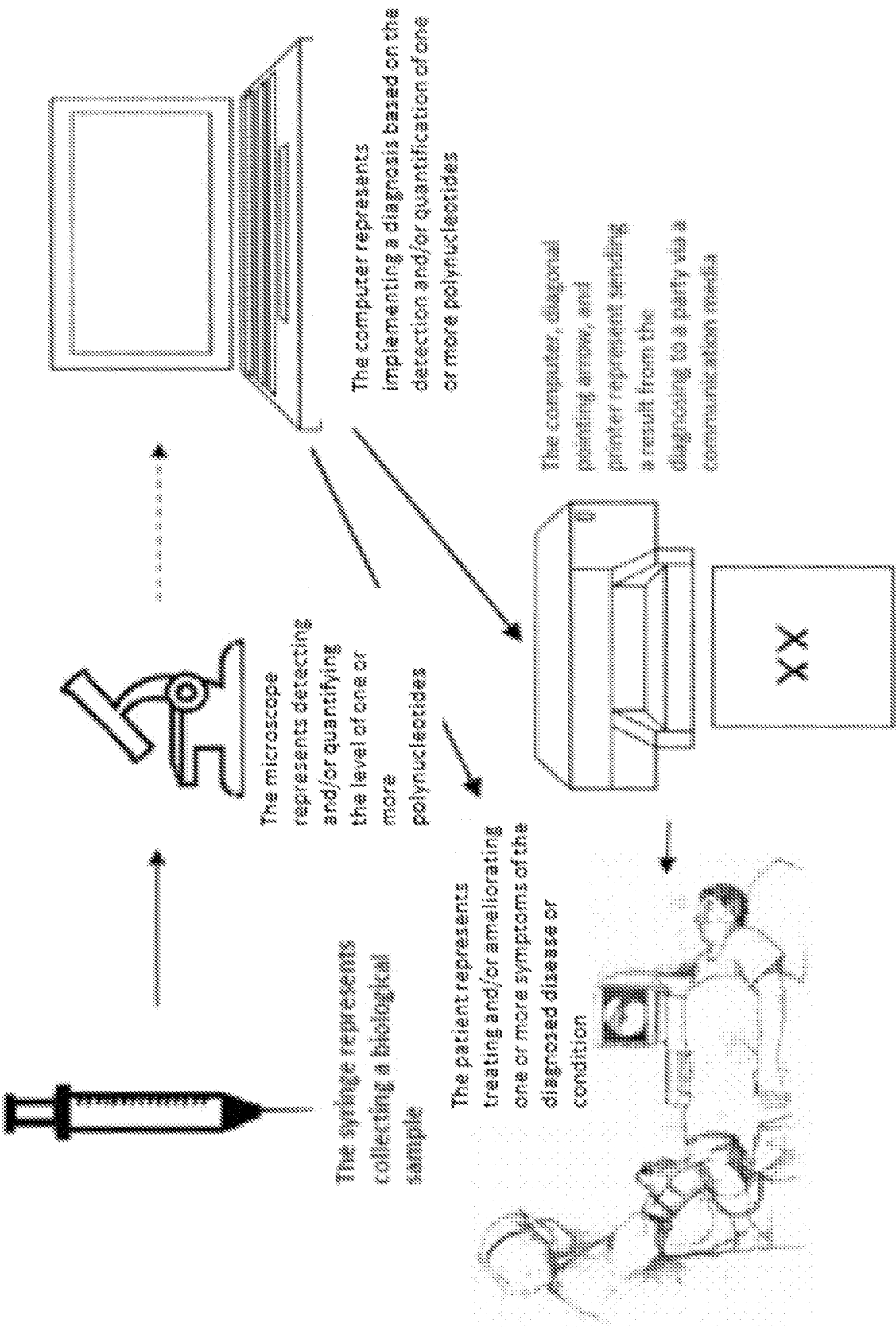


FIG. 80

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2014/053301

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, MEDLINE, 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.
X	WO 2012/048341 A1 (HARVARD COLLEGE [US]; CHURCH GEORGE M [US]; VIGNEAULT FRANCOIS [US]) 12 April 2012 (2012-04-12) the whole document -----	1-33, 35-50, 52-63, 81-87, 89,90, 92, 94-101
X	WO 2010/117620 A2 (ILLUMINA INC [US]; LINNARSSON STEN [SE]) 14 October 2010 (2010-10-14) the whole document ----- -/-	1-33, 35-50, 52-63, 81-87, 89,90, 92, 94-101



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

23 January 2015

Date of mailing of the international search report

03/02/2015

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
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Fax: (+31-70) 340-3016

Authorized officer

Botz, Jürgen

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2014/053301

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 2014/018460 A1 (SEQUENTA INC [US]; FAHAM MALEK [US]; WILLIS THOMAS [US]; ZHENG JIANBIA) 30 January 2014 (2014-01-30) the whole document	1-33, 35-50, 52-63, 81-87, 89,90, 92, 94-101
X	----- WO 2012/083225 A2 (GIGAGEN INC [US]; JOHNSON DAVID SCOTT [US]; MEYER EVERETT HURTEAU [US]) 21 June 2012 (2012-06-21) the whole document	1-33, 35-50, 52-63, 81-87, 89,90, 92, 94-101
X	----- US 2013/116130 A1 (FU GLENN K [US] ET AL) 9 May 2013 (2013-05-09) the whole document	1-33, 35-50, 52-63, 81-87, 89,90, 92, 94-101
X	----- G. K. FU ET AL: "Counting individual DNA molecules by the stochastic attachment of diverse labels", PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, vol. 108, no. 22, 31 May 2011 (2011-05-31) , pages 9026-9031, XP055164127, ISSN: 0027-8424, DOI: 10.1073/pnas.1017621108	1-3
Y	the whole document	4-102
X	----- C. B. JABARA ET AL: "Accurate sampling and deep sequencing of the HIV-1 protease gene using a Primer ID", PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, vol. 108, no. 50, 30 November 2011 (2011-11-30), pages 20166-20171, XP055161674, ISSN: 0027-8424, DOI: 10.1073/pnas.1110064108	1-3,5
Y	the whole document	4,6-102
	----- -/--	

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2014/053301

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	I. KINDE ET AL: "Detection and quantification of rare mutations with massively parallel sequencing", PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, vol. 108, no. 23, 17 May 2011 (2011-05-17), pages 9530-9535, XP055164202, ISSN: 0027-8424, DOI: 10.1073/pnas.1105422108 the whole document -----	1-102
Y	G. MIKE MAKRIGIORGOS ET AL: "A PCR-based amplification method retaining the quantitative difference between two complex genomes", NATURE BIOTECHNOLOGY, vol. 20, no. 9, 1 September 2002 (2002-09-01), pages 936-939, XP055023044, ISSN: 1087-0156, DOI: 10.1038/nbt724 the whole document -----	1-102
Y	TANG FUCHOU ET AL: "RNA-Seq analysis to capture the transcriptome landscape of a single cell", NATURE PROTOCOLS, NATURE PUBLISHING GROUP, GB, vol. 5, no. 3, 1 March 2010 (2010-03-01), pages 516-535, XP009162232, ISSN: 1750-2799 the whole document -----	1-102
Y	J. A. CASBON ET AL: "A method for counting PCR template molecules with application to next-generation sequencing", NUCLEIC ACIDS RESEARCH, vol. 39, no. 12, 13 April 2011 (2011-04-13), pages e81-e81, XP055164201, ISSN: 0305-1048, DOI: 10.1093/nar/gkr217 the whole document -----	1-102

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2014/053301

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 and necessary to the claimed invention, the international search was carried out on the basis of:
- a. (means)
- ☐ on paper
- ☒ in electronic form
- b. (time)
- ☒ in the international application as filed
- ☐ together with the international application in electronic form
- ☐ subsequently to this Authority for the purpose of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2014/053301

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2012048341	A1	12-04-2012	CA 2814049 A1	12-04-2012
			EP 2625320 A1	14-08-2013
			GB 2497912 A	26-06-2013
			GB 2512213 A	24-09-2014
			US 2013274117 A1	17-10-2013
			WO 2012048341 A1	12-04-2012

WO 2010117620	A2	14-10-2010	EP 2414548 A2	08-02-2012
			US 2012010091 A1	12-01-2012
			WO 2010117620 A2	14-10-2010

WO 2014018460	A1	30-01-2014	NONE	

WO 2012083225	A2	21-06-2012	EP 2652155 A2	23-10-2013
			US 2014057799 A1	27-02-2014
			WO 2012083225 A2	21-06-2012

US 2013116130	A1	09-05-2013	NONE	

Electronic Acknowledgement Receipt

EFS ID:	25923550
Application Number:	14540917
International Application Number:	
Confirmation Number:	7076
Title of Invention:	COMPOSITIONS AND METHODS FOR IDENTIFICATION OF A DUPLICATE SEQUENCING READ
First Named Inventor/Applicant Name:	Douglas AMORESE
Customer Number:	58249
Filer:	Jeffrey R. Bolland
Filer Authorized By:	
Attorney Docket Number:	NUGN-001/01US
Receipt Date:	31-MAY-2016
Filing Date:	13-NOV-2014
Time Stamp:	15:36:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 90
RAM confirmation Number	2305
Deposit Account	501283
Authorized User	COOLEY LLP

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	NUGN-001_01US_IDS_Transmittal.pdf	80579 3cbb2e108d2b7955022fe1ba6130bfa5274ededb	no	3
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	NUGN-001_01US_SB08.pdf	68493 6c26c7280f7ffc2b0d3e34cddb67bb1ebdc	no	4
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3		NUGN-001_01US_Response to NFOA.pdf	124862 bd18bb1ff817d9301d12deca23d8949bbb38f6df	yes	8
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	8	
Warnings:					
Information:					
4	Foreign Reference	WO2015031691A1.pdf	6479167 3cf0eccc8e3d16afdf5fd126f4088521e8037b6018	no	379
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	30775 38499384cb03adf361be294e30f15c044eb1bde4	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			6783876		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REMARKS

I. Status

Claims 1-3, 7, 9-20, and 24-25 are pending, and claims 4-6, 8, and 21-23 are cancelled.

Claim 1 is amended to recite “wherein the sequence of the identifier site is variable in sequence content in a plurality of adaptors.” Support for this amendment can be found at least in paragraphs [0020] and [0030], and figure 3, which provides support for both fixed-length and variable-length identifier sites consisting of random nucleotides. New claim 25 combines claims 1 and 22, and support for this claim can be found at least in originally filed claim 1 and paragraph [0030].

No new matter is introduced by way of amendment. Accordingly, entry thereof is respectfully requested. Upon entry of this amendment, claims 1-3, 7, 9-20, 24, and 25 are under examination.

II. 35 U.S.C. § 112(b)

Claims 1-3, 7, and 9-24 were rejected under 35 U.S.C. § 112(b) for allegedly being indefinite in the recitation of variable in reference to the identifier site.

Applicant disagrees with the Examiner’s assessment, however, solely for the purpose of expediting prosecution, claims 21-23 are cancelled, and claim 1 is amended to further define the use of “variable”. Accordingly, withdrawal of the rejection is respectfully requested.

III. 35 U.S.C. § 101

Claims 21 and 23 are rejected as allegedly directed to a judicial exception. The Examiner asserts that the claims necessarily encompass sequences occurring in nature, and further do not

include additional elements that are sufficient to amount to significantly more than the judicial exception because the other elements of the kit are, allegedly, well-understood, routine, and conventional in the art.

Applicant disagrees with the Examiner's assessment; however, solely for the purpose of expediting prosecution, claims 21 and 23 are cancelled. Accordingly, withdrawal of the rejection is respectfully requested.

IV. 35 U.S.C. § 102

Claims 21 and 23 are rejected under 35 U.S.C. 102(a)(1) as allegedly being anticipated by Casbon *et al.* (US 2012/0071331 A1).

Applicant disagrees with the Examiner's assessment; however, solely for the purpose of expediting prosecution, claims 21 and 23 are cancelled. Accordingly, withdrawal of the rejection is respectfully requested.

V. Elected Species

In response to the Examiner's Restriction Requirement sent January 7, 2015, Applicant elected genomic DNA fragments as the species of nucleic acid fragments examined in claims 13 and 14. Upon a finding of allowance of claim 1, generic to claims 13 and 14, Applicant requests examination of the remaining species of nucleic acid fragments recited in claims 13 and 14.

CONCLUSION

In view of the foregoing, Applicant respectfully submits that no further impediments exist to the allowance of this application and, therefore, requests an indication of allowability. However, the Examiner is requested to call the undersigned if any questions or comments arise.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: May 31, 2016

COOLEY LLP
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Respectfully submitted,
COOLEY LLP

By: /Jeffrey R. Bolland/
Jeffrey R. Bolland, Ph.D.
Reg. No. 73,759



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE	REQUEST ID
14/540,917	11/13/2014	Nugen Technologies, Inc.	NUGN-001/01US	18897

Acknowledgement of Change to Small Entity Status

The entity status change request below filed through Private PAIR on 05/31/2016 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

✕ Applicant asserting small entity status. See 37 CFR 1.27.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Jeffrey R. Bolland/
Name:	Jeffrey R. Bolland
Registration Number:	73759

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14540917
	Filing Date		2014-11-13
	First Named Inventor	Douglas AMORESE	
	Art Unit	1637	
	Examiner Name	Teresa E. STRZELECKA	
	Attorney Docket Number	NUGN-001/01US	

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20150299784	A1	2015-10-22	Cellular Research, Inc.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2015031691	WO	A1	2015-03-05	Cellular Research, Inc.		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵

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	Attorney Docket Number	NUGN-001/01US	

	1		☐
If you wish to add additional non-patent literature document citation information please click the Add button			
EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.			

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Art Unit	1637
Examiner Name	Teresa E. STRZELECKA
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey R. Bolland/	Date (YYYY-MM-DD)	2016-05-31
Name/Print	Jeffrey R. Bolland	Registration Number	73,759

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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If you wish to add additional U.S. Patent citation information please click the Add button.

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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
/T.E.S./	1	20150299784	A1	2015-10-22	Cellular Research, Inc.	

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/T.E.S./	1	2015031691	WO	A1	2015-03-05	Cellular Research, Inc.		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵

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	Attorney Docket Number	NUGN-001/01US	

1				☐
If you wish to add additional non-patent literature document citation information please click the Add button				
EXAMINER SIGNATURE				
Examiner Signature	/TERESA E STRZELECKA/		Date Considered	07/25/2016
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				
¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.				

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Signature	/Jeffrey R. Bolland/	Date (YYYY-MM-DD)	2016-05-31
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WEST Search History for Application 14540917

Creation Date: 2016072514:59

Interference Searches

Query	DB	Hits	Op.	Plur.	Thes.	Date
sequencing and reads near3 (duplicat \$ 7 or redundan \$ 8) and (barcod \$ 8 or index \$ 8) near3 (random \$ 8 or degener \$ 8)	PGPB, USPT	47	ADJ	YES	ASSIGNEE	07-25-2016

Prior Art Searches

Query	DB	Hits	Op.	Plur.	Thes.	Date
sequencing and reads near3 (duplicat\$7 or redundan\$8) and (barcod\$8 or index\$8) near3 random and (duplicat\$7 or redundan\$8) near3 remov\$8	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015
sequencing and reads near3 (duplicat\$7 or redundan\$8) and (barcod\$8 or index\$8) near3 (random\$8 or degener\$8)	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015
sequencing and reads near3 (duplicat\$7 or redundan\$8) and (barcod\$8 or index\$8) near3 (random\$8 or degener\$8)	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015
sequencing and duplicate near3 remov\$8 and ((C12Q1/6869 C12Q2563/179 C12Q2535/122 C12Q2537/1376 C12Q2563/159 C12Q1/6806 C12Q2521/319 C12Q2521/507 C12Q2525/15 C12Q2525/155 C12Q2525/161 C12Q2525/185 C12Q2525/191 C12Q2525/197 C12Q2525/313 C12Q2537/159 C12Q2537/165 C12Q2549/10 C12Q2565/514 C12Q1/6874 C12Q1/6876 C12Q1/6879 C12Q1/689 C12Q2600/156 C12Q2600/166 C12N15/1065 C12N15/1093 C12N15/1089 G06F19/18).CPC.)	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015
(sequencing and duplicate near3 remov\$8 and ((C12Q1/6869 C12Q2563/179 C12Q2535/122 C12Q2537/1376 C12Q2563/159 C12Q1/6806 C12Q2521/319 C12Q2521/507 C12Q2525/15	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015

C12Q2525/155 C12Q2525/161 C12Q2525/185 C12Q2525/191 C12Q2525/197 C12Q2525/313 C12Q2537/159 C12Q2537/165 C12Q2549/10 C12Q2565/514 C12Q1/6874 C12Q1/6876 C12Q1/6879 C12Q1/689 C12Q2600/156 C12Q2600/166 C12N15/1065 C12N15/1093 C12N15/1089 G06F19/18).CPC.)) and random\$8 near3 (barcode\$8 or index\$8)						
sequencing and duplicate near3 remov\$8 and ((C12Q1/6869 C12Q2563/179 C12Q2535/122 C12Q2537/1376 C12Q2563/159 C12Q1/6806 C12Q2521/319 C12Q2521/507 C12Q2525/15 C12Q2525/155 C12Q2525/161 C12Q2525/185 C12Q2525/191 C12Q2525/197 C12Q2525/313 C12Q2537/159 C12Q2537/165 C12Q2549/10 C12Q2565/514 C12Q1/6874 C12Q1/6876 C12Q1/6879 C12Q1/689 C12Q2600/156 C12Q2600/166 C12N15/1065 C12N15/1093 C12N15/1089 G06F19/18).CPC.)	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015
(sequencing and duplicate near3 remov\$8 and ((C12Q1/6869 C12Q2563/179 C12Q2535/122 C12Q2537/1376 C12Q2563/159 C12Q1/6806 C12Q2521/319 C12Q2521/507 C12Q2525/15 C12Q2525/155 C12Q2525/161 C12Q2525/185 C12Q2525/191 C12Q2525/197 C12Q2525/313 C12Q2537/159 C12Q2537/165 C12Q2549/10 C12Q2565/514 C12Q1/6874 C12Q1/6876 C12Q1/6879 C12Q1/689 C12Q2600/156 C12Q2600/166 C12N15/1065 C12N15/1093 C12N15/1089 G06F19/18).CPC.)) and random\$8 near3 (barcode\$8 or index\$8)	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015
sequencing and duplicate near3 remov\$8 and ((C12Q1/6869 C12Q2563/179 C12Q2535/122 C12Q2537/1376 C12Q2563/159 C12Q1/6806 C12Q2521/319 C12Q2521/507 C12Q2525/15 C12Q2525/155 C12Q2525/161 C12Q2525/185 C12Q2525/191 C12Q2525/197 C12Q2525/313 C12Q2537/159 C12Q2537/165 C12Q2549/10 C12Q2565/514 C12Q1/6874	DWPI	n/a	ADJ	YES	ASSIGNEE	05-13-2015

C12Q1/6876 C12Q1/6879 C12Q1/689 C12Q2600/156 C12Q2600/166 C12N15/1065 C12N15/1093 C12N15/1089 G06F19/18).CPC.)						
20110269647	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015
(Amorese.in. or Scolnick.in. or Schroeder.in. or Nugen.asn.) and sequencing and duplicate	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015
(Amorese.in. or Scolnick.in. or Schroeder.in. or Nugen.asn.) and sequencing and duplicate	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015
US-6251639-\$.DID. OR US-5750341-\$.DID. OR US-6306597-\$.DID. OR US-5969119-\$.DID. OR US-7244559-\$.DID. OR US-7335762-\$.DID. OR US-7211390-\$.DID. OR US-7244567-\$.DID.	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015
US-7264929-\$.DID. OR US-7323305-\$.DID. OR US-7501245-\$.DID. OR US-7491498-\$.DID. OR US-7276720-\$.DID. OR US-7462452-\$.DID. OR US-7476504-\$.DID. OR US-7405281-\$.DID. OR US-7170050-\$.DID. OR US-7462468-\$.DID. OR US-7476503-\$.DID.	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015
US-7315019-\$.DID. OR US-7302146-\$.DID. OR US-7313318-\$.DID. OR US-6449562-\$.DID. OR US-6287766-\$.DID. OR US-7361468-\$.DID. OR US-6225109-\$.DID. OR US-6110709-\$.DID.	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015
US-20130231253-\$.DID. OR US-20060024711-\$.DID. OR US-20090061439-\$.DID. OR US-20080087826-\$.DID. OR US-20060286566-\$.DID. OR US-20060024678-\$.DID. OR US-20080213770-\$.DID. OR US-20080103058-\$.DID. OR US-20090029385-\$.DID. OR US-20090068655-\$.DID.	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015
US-20090024331-\$.DID. OR US-20080206764-\$.DID. OR US-20090026082-\$.DID.	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015
((US-20130231253-\$.DID. OR US-20060024711-\$.DID. OR US-20090061439-\$.DID. OR US-20080087826-\$.DID. OR US-20060286566-\$.DID. OR	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015

US-20060024678-\$.DID. OR US-20080213770-\$.DID. OR US-20080103058-\$.DID. OR US-20090029385-\$.DID. OR US-20090068655-\$.DID.) or (US-20090024331-\$.DID. OR US-20080206764-\$.DID. OR US-20090026082-\$.DID.)) and sequencing and duplicate						
((US-20130231253-\$.DID. OR US-20060024711-\$.DID. OR US-20090061439-\$.DID. OR US-20080087826-\$.DID. OR US-20060286566-\$.DID. OR US-20060024678-\$.DID. OR US-20080213770-\$.DID. OR US-20080103058-\$.DID. OR US-20090029385-\$.DID. OR US-20090068655-\$.DID.) or (US-20090024331-\$.DID. OR US-20080206764-\$.DID. OR US-20090026082-\$.DID.)) and sequencing and random near3 (barcod\$8 or index\$8)	PGPB	n/a	ADJ	YES	ASSIGNEE	05-13-2015
((US-6251639-\$.DID. OR US-5750341-\$.DID. OR US-6306597-\$.DID. OR US-5969119-\$.DID. OR US-7244559-\$.DID. OR US-7335762-\$.DID. OR US-7211390-\$.DID. OR US-7244567-\$.DID.) or (US-7264929-\$.DID. OR US-7323305-\$.DID. OR US-7501245-\$.DID. OR US-7491498-\$.DID. OR US-7276720-\$.DID. OR US-7462452-\$.DID. OR US-7476504-\$.DID. OR US-7405281-\$.DID. OR US-7170050-\$.DID. OR US-7462468-\$.DID. OR US-7476503-\$.DID.) or (US-7315019-\$.DID. OR US-7302146-\$.DID. OR US-7313318-\$.DID. OR US-6449562-\$.DID. OR US-6287766-\$.DID. OR US-7361468-\$.DID. OR US-6225109-\$.DID. OR US-6110709-\$.DID.)) and sequencing and duplicate	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015
((US-6251639-\$.DID. OR US-5750341-\$.DID. OR US-6306597-\$.DID. OR US-5969119-\$.DID. OR US-7244559-\$.DID. OR US-7335762-\$.DID. OR US-7211390-\$.DID. OR US-7244567-\$.DID.) or (US-7264929-\$.DID. OR US-7323305-\$.DID. OR US-7501245-\$.DID.	USPT	n/a	ADJ	YES	ASSIGNEE	05-13-2015

OR US-7491498-\$.DID. OR US-7276720-\$.DID. OR US-7462452-\$.DID. OR US-7476504-\$.DID. OR US-7405281-\$.DID. OR US-7170050-\$.DID. OR US-7462468-\$.DID. OR US-7476503-\$.DID.) or (US-7315019-\$.DID. OR US-7302146-\$.DID. OR US-7313318-\$.DID. OR US-6449562-\$.DID. OR US-6287766-\$.DID. OR US-7361468-\$.DID. OR US-6225109-\$.DID. OR US-6110709-\$.DID.)) and sequencing and random near3 (barcod\$8 or index\$8)						
sequencing and reads near3 (duplicat\$7 or redundan\$8) and (barcod\$8 or index\$8) near3 (random\$8 or degener\$8)	USPT	10	ADJ	YES	ASSIGNEE	02-24-2016
sequencing and reads near3 (duplicat\$7 or redundan\$8) and (barcod\$8 or index\$8) near3 (random\$8 or degener\$8)	PGPB	33	ADJ	YES	ASSIGNEE	02-24-2016
sequencing and duplicate near3 remov\$8	USPT	314	ADJ	YES	ASSIGNEE	02-24-2016
(sequencing and duplicate near3 remov\$8) and duplicate near3 (barcod\$7 or index\$7 or tag\$7)	USPT	9	ADJ	YES	ASSIGNEE	02-24-2016
sequencing and duplicate near3 read and duplicate near3 remov\$8	USPT	9	ADJ	YES	ASSIGNEE	02-24-2016
sequencing and duplicate near3 read and duplicate near3 remov\$8	PGPB	58	ADJ	YES	ASSIGNEE	02-24-2016
(sequencing and duplicate near3 read and duplicate near3 remov\$8) and (barcod\$5 or index\$7 or tag\$7)	PGPB	52	ADJ	YES	ASSIGNEE	02-24-2016
sequencing and duplicate near3 read and duplicate near3 remov\$8	DWPI	2	ADJ	YES	ASSIGNEE	02-24-2016
WO-2014171898-A2.did.	EPAB	0	ADJ	YES	ASSIGNEE	02-24-2016
20150299784	PGPB	1	ADJ	YES	ASSIGNEE	07-25-2016
14/540917.app.	PGPB	1	ADJ	YES	ASSIGNEE	07-25-2016
sequencing and duplicate near3 remov\$8 and ((C12Q1/6869 C12Q2525/179 C12Q2525/191 C12Q2537/157 C12Q2563/179 C12Q2565/514).CPC.)	PGPB	27	ADJ	YES	ASSIGNEE	07-25-2016
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sequencing and duplicate near3 remov\$8 and ((C12Q1/6869 C12Q2525/179 C12Q2525/191 C12Q2537/157 C12Q2563/179 C12Q2565/514).CPC.)	DWPI	2	ADJ	YES	ASSIGNEE	07-25-2016
sequencing and reads near3 (duplicat\$7 or redundan\$8) and (barcod\$8 or index\$8) near3 (random\$8 or degener\$8)	PGPB	36	ADJ	YES	ASSIGNEE	07-25-2016
sequencing and reads near3 (duplicat\$7 or redundan\$8) and (barcod\$8 or index\$8) near3 (random\$8 or degener\$8)	USPT	11	ADJ	YES	ASSIGNEE	07-25-2016
sequencing and reads near3 (duplicat\$7 or redundan\$8) and (barcod\$8 or index\$8) near3 (random\$8 or degener\$8)	DWPI	1	ADJ	YES	ASSIGNEE	07-25-2016
US-20160076023-A1.did.	PGPB	1	ADJ	YES	ASSIGNEE	07-25-2016

Search Notes 	Application/Control No. 14540917	Applicant(s)/Patent Under Reexamination AMORESE ET AL.
	Examiner TERESA E STRZELECKA	Art Unit 1637

CPC- SEARCHED		
Symbol	Date	Examiner
C12Q1/6869 C12Q2563/179 C12Q2535/122 C12Q2537/1376 C12Q2563/159 C12Q1/6806 C12Q2521/319 C12Q2521/507 C12Q2525/15 C12Q2525/155 C12Q2525/161 C12Q2525/185 C12Q2525/191 C12Q2525/197	5/13/15	/TS/
C12Q1/6869 C12Q2563/179 C12Q2535/122 C12Q2537/1376 C12Q2563/159 C12Q1/6806 C12Q2521/319 C12Q2521/507 C12Q2525/15 C12Q2525/155 C12Q2525/161 C12Q2525/185 C12Q2525/191 C12Q2525/197	7/25/16	/TS/

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

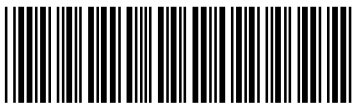
US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
IDS (12/4/14; 3/21/15)	5/13/15	/TS/
WEST	5/13/15	/TS/
Google	5/13/15	/TS/
Inventor name search	5/13/15	/TS/
IDS (8/19/15)	9/21/15	/TS/
Inventor name search	2/23/16	/TS/
Google	2/23/16	/TS/
BLAST	2/23/16	/TS/
WEST	2/24/16	/TS/
WEST	7/25/15	/TS/

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INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	WEST	7/25/16	/TS/

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<i>Index of Claims</i> 	Application/Control No. 14540917	Applicant(s)/Patent Under Reexamination AMORESE ET AL.
	Examiner TERESA STRZELECKA	Art Unit 1637

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant		☐ CPA		☐ T.D.		☐ R.1.47			
CLAIM		DATE							
Final	Original	05/14/2015	09/21/2015	02/25/2016	07/26/2016				
	1	✓	✓	✓	✓				
	2	✓	✓	✓	✓				
	3	✓	✓	✓	✓				
	4	N	N	-	-				
	5	N	N	-	-				
	6	N	N	-	-				
	7	✓	✓	✓	✓				
	8	N	N	N	-				
	9	✓	✓	✓	✓				
	10	✓	✓	✓	✓				
	11	✓	✓	✓	✓				
	12	✓	✓	✓	✓				
	13	✓	✓	✓	✓				
	14	✓	✓	✓	✓				
	15	✓	✓	✓	✓				
	16	✓	✓	✓	✓				
	17	✓	✓	✓	✓				
	18	✓	✓	✓	✓				
	19	✓	✓	✓	✓				
	20	✓	✓	✓	✓				
	21	✓	✓	✓	-				
	22			✓	-				
	23			✓	-				
	24			✓	✓				
	25				✓				



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/540,917	11/13/2014	Douglas AMORESE	NUGN-001/01US	7076
58249	7590	07/29/2016		
COOLEY LLP ATTN: Patent Group 1299 Pennsylvania Avenue, NW Suite 700 Washington, DC 20004			EXAMINER STRZELECKA, TERESA E	
			ART UNIT	PAPER NUMBER
			1637	
			NOTIFICATION DATE	DELIVERY MODE
			07/29/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

zpatdcdocketing@cooley.com

Office Action Summary	Application No. 14/540,917	Applicant(s) AMORESE ET AL.	
	Examiner TERESA STRZELECKA	Art Unit 1637	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 5/31/16.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 1,2,7,9-20,24 and 25 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☒ Claim(s) 1,2,7,9-20,24 and 25 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date 5/31/16.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

4) ☐ Other: _____.

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

2. This office action is in response to an amendment filed May 31, 2016. Claims 1-3 and 7-24 were previously pending, with claim 8 withdrawn from consideration. Applicant amended claim 1, cancelled claims 8 and 21-23 and added new claim 25. Claims 1-3, 7, 9-20, 24 and 25 are under consideration.

3. Applicant's amendments and claim cancellations obviated the previously presented rejections. However, this office action is made non-final because the art rejections which were applicable to the previously amended claims were inadvertently omitted from the previous office action.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on May 31, 2016 was filed after the mailing date of the non-final rejection on March 3, 2016. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

7. Claims 1-3, 7, 9-20, 24 and 25 are rejected under 35 U.S.C. 103 as being unpatentable over Samuels et al. (US 2012/0220494 A1; filed February 16, 2012 and published August 30, 2012; previously cited) and McCloskey et al. (Biochem. Genet., vol. 45, pp. 761-767, 2007; previously cited).

A) Regarding claims 1 and 7, Samuels et al. teach a method for detecting a duplicate sequencing read from a population of sample sequencing reads comprising:

a) ligating an adaptor to a 5' end of each nucleic acid fragment of a plurality of nucleic acid fragments from one or more samples, wherein the adaptor comprises:

(i) an indexing primer binding site;

(ii) an indexing site;

(iii) an identifier site consisting of between 1 and 8 nucleotides; and

(iv) a target sequence primer binding site (page 14, [0205]; page 15, [0209], [0212], [0216]-[0217]; Fig. 6; page 16, [0231]-[0232]; page 17, [0232]-[0235]; page 16/17, [0245];

where the adaptors have an indexing primer binding site, an indexing site, an identifier site and a target sequence primer binding site; Samuels et al. teach identifier site between 2 and 21

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nucleotides in length, or from 5-15 nucleotides (page 3, [0029]; page 15/16, [0217]). The indexing site and identifiers are both unique to subsets of polynucleotides and are variable in sequence content, since they constitute random nucleotides);

b) amplifying the adapter-nucleic acid fragment ligated products (page 22, [0288]-[0289]; page 25, [0326]-[0327]);

c) generating a population of sequencing reads from amplified adapter-nucleic acid fragment ligated products (page 25, [0326]-[0328]; page 26, [0328]-[0337]; and

d) detecting the population of sequencing reads comprising the same identifier site and nucleic acid fragment as another sequencing read in the population of sequencing reads (page 26/27, [0328]; page 27, [0339]-[0341]; Fig. 43 and 44; where sequencing errors due to PCR are detected).

Regarding claim 3, Samuels et al. teach sequencing the identifier site with the indexing site (Fig. 43; page 27, [0339]-[0341]).

Regarding claim 9, Samuels et al. teach barcoding multiple samples (page 6, [0122]; page 14, [0202]).

Regarding claims 13 and 14, Samuels et al. teach DNA and RNA fragments, and genomic DNA (page 2, [0017]).

Regarding claims 17 and 18, Samuels et al. teach identifier site between 2 and 21 nucleotides in length, or from 5-15 nucleotides (page 3, [0029]; page 15/16, [0217]).

Regarding claim 19, Samuels et al. teach indexing primer site being a universal primer site (page 15, [0216]).

Regarding claim 20, Samuels et al. teach target sequence binding site being a universal binding site (page 15, [0216]).

Regarding claim 25, Samuels et al. teach identifiers with random sequences between 2 and 21 bp long. Therefore, since Applicant did not define the extent to which the sequence content of the plurality of adaptors not being variable, the random identifiers of Samuels et al. anticipate this term. For example, a set of random 8mers will share 2, 3, 4, 5, 6 or 7 base pairs with at least one other random 8mer, providing for adaptors with conserved sequence content.

B) Samuels et al. teach detection of PCR-introduced errors in sequencing, but do not specifically teach detecting duplicate sequencing reads.

C) Regarding claim 1, McCloskey et al. teach attaching an adaptor containing an indexing primer binding site, an indexing site, an identifier site and a target sequence binding site to genomic DNA by amplification, PCR-amplifying the resulting construct and sequencing (Fig. 1; page 762, paragraphs 3-5; page 763; page 764, paragraphs 1-4).

Regarding claims 1, 2, 10-12 and 24, McCloskey et al. teach sequencing the PCR products containing the adapter sequences, grouping the sequencing reads based on the batch stamp (= indexing site) and barcode (= identifier site) and detecting and removing duplicate reads (page 766, fourth and fifth paragraphs).

Regarding claims 15 and 16, McCloskey et al. teach indexing site between six and eight bp (page 764, second paragraph).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to have used the batch-stamp and barcode-encoded oligonucleotides as suggested

by McCloskey et al. in the method of Samuels et al. to eliminate PCR-originating artefacts. As stated by McCloskey et al. (Abstract):

“Polymerase chain reaction (PCR) has become the mainstay of DNA sequence analysis. Yet there is always uncertainty concerning the source of the template DNA that gave rise to a particular PCR product. The risks of contamination, biased amplification, and product redundancy are especially high when limited amounts of template DNA are used. We have developed and applied molecular encoding principles to solve this source-uncertainty problem for DNA sequences generated by standard PCR. Batch-stamps specify the date and sample identity, and barcodes detect template redundancy. Our approach thus enables classification of each PCR-derived sequence as valid, contaminant, or redundant, and provides a measure of sequence diversity. We recommend that batch-stamps and barcodes be used when amplifying irreplaceable DNAs and cDNAs available for forensic, clinical, single cell, and ancient DNA analyses.”

8. No claims are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERESA STRZELECKA whose telephone number is (571)272-0789. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1637

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TERESA STRZELECKA/
Primary Examiner, Art Unit 1637
July 26, 2016

Search Notes 	Application/Control No. 14540917	Applicant(s)/Patent Under Reexamination AMORESE ET AL.
	Examiner TERESA E STRZELECKA	Art Unit 1637

CPC- SEARCHED		
Symbol	Date	Examiner
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C12Q1/6869 C12Q2563/179 C12Q2535/122 C12Q2537/1376 C12Q2563/159 C12Q1/6806 C12Q2521/319 C12Q2521/507 C12Q2525/15 C12Q2525/155 C12Q2525/161 C12Q2525/185 C12Q2525/191 C12Q2525/197	7/25/16	/TS/

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
IDS (12/4/14; 3/21/15)	5/13/15	/TS/
WEST	5/13/15	/TS/
Google	5/13/15	/TS/
Inventor name search	5/13/15	/TS/
IDS (8/19/15)	9/21/15	/TS/
Inventor name search	2/23/16	/TS/
Google	2/23/16	/TS/
BLAST	2/23/16	/TS/
WEST	2/24/16	/TS/
WEST	7/25/15	/TS/

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INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	WEST	7/25/16	/TS/

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Issue Classification 	Application/Control No. 14540917	Applicant(s)/Patent Under Reexamination AMORESE ET AL.
	Examiner TERESA STRZELECKA	Art Unit 1637

CPC						
Symbol				Type	Version	
C12Q		1	/	6869	F	2013-01-01
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CPC Combination Sets								
Symbol					Type	Set	Ranking	Version
C12Q		1		6869	I	1	1	2013-01-01
C12Q		2525		179	A	1	2	2013-01-01
C12Q		2525		191	A	1	3	2013-01-01
C12Q		2537		157	A	1	4	2013-01-01
C12Q		2563		179	A	1	5	2013-01-01
C12Q		2565		514	A	1	6	2013-01-01

NONE			Total Claims Allowed: 18	
(Assistant Examiner)	(Date)			
/TERESA STRZELECKA/ Primary Examiner.Art Unit 1637	8/25/16	O.G. Print Claim(s)	O.G. Print Figure	
(Primary Examiner)	(Date)	1,25	None	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14540917
	Filing Date		2014-11-13
	First Named Inventor	Douglas AMORESE	
	Art Unit	1637	
	Examiner Name	Teresa E. STRZELECKA	
Attorney Docket Number		NUGN-001/01US	

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button.

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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
/TS/	1	20150299784	A1	2015-10-22	Cellular Research, Inc.	

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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
/TS/	1	2015031691	WO	A1	2015-03-05	Cellular Research, Inc.		☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14540917
	Filing Date		2014-11-13
	First Named Inventor	Douglas AMORESE	
	Art Unit	1637	
	Examiner Name	Teresa E. STRZELECKA	
	Attorney Docket Number	NUGN-001/01US	

	1		☐
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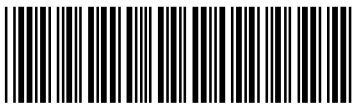
If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/Teresa Strzelecka/	Date Considered	08/25/2016
--------------------	---------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

<i>Index of Claims</i> 	Application/Control No. 14540917	Applicant(s)/Patent Under Reexamination AMORESE ET AL.
	Examiner TERESA STRZELECKA	Art Unit 1637

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant		☐ CPA		☐ T.D.		☐ R.1.47				
CLAIM		DATE								
Final	Original	05/14/2015	09/21/2015	02/25/2016	07/26/2016	08/25/2016				
	1	✓	✓	✓	✓	=				
	2	✓	✓	✓	✓	=				
	3	✓	✓	✓	✓	=				
	4	N	N	-	-	-				
	5	N	N	-	-	-				
	6	N	N	-	-	-				
	7	✓	✓	✓	✓	=				
	8	N	N	N	-	-				
	9	✓	✓	✓	✓	=				
	10	✓	✓	✓	✓	=				
	11	✓	✓	✓	✓	=				
	12	✓	✓	✓	✓	=				
	13	✓	✓	✓	✓	=				
	14	✓	✓	✓	✓	=				
	15	✓	✓	✓	✓	=				
	16	✓	✓	✓	✓	=				
	17	✓	✓	✓	✓	=				
	18	✓	✓	✓	✓	=				
	19	✓	✓	✓	✓	=				
	20	✓	✓	✓	✓	=				
	21	✓	✓	✓	-	-				
	22			✓	-	-				
	23			✓	-	-				
	24			✓	✓	=				
	25				✓	=				



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

58249 7590 09/06/2016
COOLEY LLP
ATTN: Patent Group
1299 Pennsylvania Avenue, NW
Suite 700
Washington, DC 20004

EXAMINER

STRZELECKA, TERESA E

ART UNIT

PAPER NUMBER

1637

DATE MAILED: 09/06/2016

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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14/540,917

11/13/2014

Douglas AMORESE

NUGN-001/01US

7076

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR IDENTIFICATION OF A DUPLICATE SEQUENCING READ

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	12/06/2016

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or **Fax** (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

58249 7590 09/06/2016
COOLEY LLP
ATTN: Patent Group
1299 Pennsylvania Avenue, NW
Suite 700
Washington, DC 20004

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)
_____ (Signature)
_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/540,917	11/13/2014	Douglas AMORESE	NUGN-001/01US	7076

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR IDENTIFICATION OF A DUPLICATE SEQUENCING READ

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	12/06/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
STRZELECKA, TERESA E	1637	435-006120

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

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P.O. Box 1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/540,917	11/13/2014	Douglas AMORESE	NUGN-001/01US	7076

EXAMINER
STRZELECKA, TERESA E

ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 09/06/2016

58249 7590 09/06/2016
COOLEY LLP
ATTN: Patent Group
1299 Pennsylvania Avenue, NW
Suite 700
Washington, DC 20004

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<i>Notice Requiring Inventor's Oath or Declaration</i>	Application No. 14/540,917	Applicant(s) Douglas AMORESE	
	Examiner STRZELECKA, TERESA E	Art Unit 1637	

This notice is an attachment to the Notice of Allowability (PTOL-37), or the Notice of Allowability For A Design Application (PTOL-37D).

An inventor's oath or declaration in compliance with 37 CFR 1.63 or 1.64 executed by or with respect to each inventor has not yet been submitted.

An oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each inventor (for any inventor for which a compliant oath, declaration, or substitute statement has not yet been submitted) **MUST** be filed no later than the date on which the issue fee is paid. See 35 U.S.C. 115(f). Failure to timely comply will result in ABANDONMENT of this application.

A properly executed inventor's oath to declaration has not been received for the following inventor(s):

If applicant previously filed one or more oaths, declarations, or substitute statements, applicant may have received an informational notice regarding deficiencies therein.

The following deficiencies are noted:

INFORMAL ACTION PROBLEMS

- A properly executed inventor's oath or declaration has not been received for the following inventor(s): **Douglas AMORESE, Jonathan Scolnick, and Ben Schroeder**. Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Questions relating to this Notice should be directed to the Application Assistance Unit at 571-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/540,917	Applicant(s) AMORESE ET AL.	
	Examiner TERESA STRZELECKA	Art Unit 1637	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed May 31, 2016.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-3,7,9-20,24 and 25. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. ☐ Notice of References Cited (PTO-892) | 5. ☒ Examiner's Amendment/Comment |
| 2. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>5/31/16</u> | 6. ☐ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. ☐ Other ____. |
| 4. ☒ Interview Summary (PTO-413),
Paper No./Mail Date <u>8/25/16</u> . | |

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

2. The non-final rejection mailed on July 29, 2016 is herewith withdrawn, and is replaced with this Notice of Allowability.

3. This office action is in response to an amendment filed May 31, 2016. Claims 1-3 and 7-24 were previously pending, with claim 8 withdrawn from consideration. Applicant amended claim 1, cancelled claims 8 and 21-23 and added new claim 25. Claims 1-3, 7, 9-20, 24 and 25 are under consideration.

4. Applicant's amendments and claim cancellations obviated the previously presented rejections. Since no new references were found teaching or suggesting the instant claims, they are allowed.

Information Disclosure Statement

5. The information disclosure statement (IDS) submitted on May 31, 2016 was filed after the mailing date of the non-final office action on March 3, 2016. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERESA STRZELECKA whose telephone number is (571)272-0789. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TERESA STRZELECKA/
Primary Examiner, Art Unit 1637
August 25, 2016

<i>Applicant-Initiated Interview Summary</i>	Application No. 14/540,917	Applicant(s) AMORESE ET AL.	
	Examiner TERESA STRZELECKA	Art Unit 1637	

All participants (applicant, applicant's representative, PTO personnel):

(1) Teresa Strzelecka. (3) _____.

(2) Jeffrey Bolland. (4) _____.

Date of Interview: 25 August 2016.

Type: ☒ Telephonic ☐ Video Conference
 ☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
 If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
 (For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: all.

Identification of prior art discussed: _____.

Substance of Interview
 (For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Mr. Bolland contacted examiner on August 24 to inquire about the second non-final rejection which was mailed on July 29, 2016 following an amendment, and which contained a rejection which was previously withdrawn. After review of the previous office actions examiner informed Mr. Bolland that the office action was issued in error and a Notice of Allowability will be issued instead.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent and Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/540,917	11/13/2014	Douglas AMORESE	NUGN-001/01US	7076
7590		09/15/2016	EXAMINER	
COOLEY LLP		STRZELECKA, TERESA E		
ATTN: Patent Group		ART UNIT		
1299 Pennsylvania Avenue, NW		PAPER NUMBER		
Suite 700		1637		
Washington, DC 20004		NOTIFICATION DATE		
		09/15/2016		
		DELIVERY MODE		
		ELECTRONIC		

Letter Withdrawing a Notice Requiring Inventor's Oath or Declaration

The Notice Requiring Inventor's Oath or Declaration mailed on 9/6/16 was sent in error, and is hereby withdrawn. The time period set forth in the Notice of Allowance and Fee(s) Due to file a reply and pay the required fees continues to run from the mailing date of the Notice of Allowance and Fee(s) Due. Any time period set forth in the Notice of Allowability continues to run from the mailing date of the Notice of Allowability.

Questions relating to this Notice should be directed to the Application Assistance Unit at 571-272-4200.

(571)-272-4200 or 1(888)-786-0101

Patent Publication Branch

Office of Data Management

Electronic Patent Application Fee Transmittal				
Application Number:		14540917		
Filing Date:		13-Nov-2014		
Title of Invention:		COMPOSITIONS AND METHODS FOR IDENTIFICATION OF A DUPLICATE SEQUENCING READ		
First Named Inventor/Applicant Name:		Douglas AMORESE		
Filer:		Jeffrey R. Bolland/zainab ariyibi		
Attorney Docket Number:		NUGN-001/01US 301735-2003		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				480

Electronic Acknowledgement Receipt

EFS ID:	27689764
Application Number:	14540917
International Application Number:	
Confirmation Number:	7076
Title of Invention:	COMPOSITIONS AND METHODS FOR IDENTIFICATION OF A DUPLICATE SEQUENCING READ
First Named Inventor/Applicant Name:	Douglas AMORESE
Customer Number:	58249
Filer:	Jeffrey R. Bolland/zainab ariyibi
Filer Authorized By:	Jeffrey R. Bolland
Attorney Docket Number:	NUGN-001/01US 301735-2003
Receipt Date:	06-DEC-2016
Filing Date:	13-NOV-2014
Time Stamp:	10:30:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 480
RAM confirmation Number	120616INTEFSW00005070501283
Deposit Account	501283
Authorized User	ZAINAB ARIYIBI

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	NUGN00101US_IF_Transmittal_Signed.pdf	1710549	no	1
			e3f23309c5f6fb64f960f27e2d2cba0493645b99		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30825	no	2
			042b727e4107f957e6281ca09b0c954869d8b0c8		

Warnings:

Information:

Total Files Size (in bytes):	1741374
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or **Fax** (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

58249 7590 09/06/2016
COOLEY LLP
ATTN: Patent Group
1299 Pennsylvania Avenue, NW
Suite 700
Washington, DC 20004

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

	(Depositor's name)
	(Signature)
	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/540,917	11/13/2014	Douglas AMORESE	NUGN-001/01US	7076

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR IDENTIFICATION OF A DUPLICATE SEQUENCING READ

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	12/06/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
STRZELECKA, TERESA E	1637	435-006120

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 COOLEY LLP

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

NUGEN TECHNOLOGIES, INC.

SAN CARLOS, CALIFORNIA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 50-1283 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Jeffrey R. Bolland/

Date December 6, 2016

Typed or printed name Jeffrey R. Bolland

Registration No. 73,759

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14540917
	Filing Date		2014-11-13
	First Named Inventor	Douglas AMORESE	
	Art Unit	1637	
	Examiner Name	Teresa E. STRZELECKA	
Attorney Docket Number		NUGN-001/01US	

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
TS/	1	20150299784	A1	2015-10-22	Fan et al. ~~Cellular Research, Inc.~~	

Change(s) applied

to document,

/A.E.M./

9/28/2016

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
TS/	1	2015031691	WO	A1	2015-03-05	Cellular Research, Inc.		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14540917	14540917 - GAU: 1637
	Filing Date		2014-11-13	
	First Named Inventor	Douglas AMORESE		
	Art Unit	~~4636~~		
	Examiner Name	~~Unassigned~~	Teresa	
	Attorney Docket Number	NUGN-001/01US	Strzelecka	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TS/

	12	20090024331	A1	2009-01-22	Tomaney et al.	
Change(s) applied to document, 13 /C.C.B./ 10/4/2016		20080206764	A1	~~2008-16-28~~ 08/2008	Williams et al.	
	14	20090026082	A1	2009-01-29	Rothberg et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
								☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	WESTIN et al., Anchored multiplex amplification on a microelectronic chip array. 2000. Nature Biotechnology. 18:199-204.	☐
	2	Walker et al., Strand displacement amplification--an isothermal, in vitro DNA amplification technique. 1992. Nucleic Acids Research. 20(7):1691-1696.	☐
	3	MARGULIES et al. Genome sequencing in open microfabricated high density picoliter reactors. 2005. Nature. 437 (7057):376-380.	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14540917	14540917 - GAU: 1637
	Filing Date		2014-11-13	
	First Named Inventor	Douglas AMORESE		
	Art Unit	~~1636~~		
	Examiner Name	~~Unassigned~~	Teresa	
	Attorney Docket Number	NUGN-001/01US	Strzelecka	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TS/

	1	20130231253	A1	2013-09-05	Amorese et al.	
	2	20060024711	A1	2006-02-02	Lapidus et al.	
Change(s) applied to document, /C.C.B./ 10/4/2016	3	20090061439	B2	~~2010-06-05~~ 03/2009	Philip Richard Buzby	
Change(s) applied to document, /C.C.B./ 10/1/2016	4	20080087826	A1	~~2012-11-01~~ 04/2008	~~Cole et al.~~ Harris et al.	
	5	20060286566	A1	2006-12-21	Lapidus et al.	
	6	20060024711	A1	2006-02-02	Lapidus et al.	
	7	20060024678	A1	2006-02-02	Philip Buzby	
	8	20080213770	A1	2008-09-04	Williams et al.	
	9	20080103058	A1	2008-05-01	Suhaib Siddiqi	
	10	20090029385	A1	2009-01-29	Christians et al.	
	11	20090068655	A1	2009-03-12	John G.K. Williams	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14540917	14540917 - GAU: 1637
	Filing Date		2014-11-13	
	First Named Inventor	Douglas AMORESE		
	Art Unit	~~4636~~		
	Examiner Name	~~Unassigned~~	Teresa	
	Attorney Docket Number	NUGN-001/01US	Strzelecka	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TS/

	20	7315019	B2	2008-01-01	Turner et al.	
	21	7302146	B2	2007-11-27	Turner et al.	
	22	~~7313318~~ 7,313,308	B2	2007-12-25	Turner et al.	
	23	6449562	B1	2002-10-10	Chandler et al.	
	24	6287766	B1	2001-09-11	Nolan et al.	
	25	7361468	B2	2008-04-22	Liu et al.	
	26	7414117	B2	2008-08-19	Saito et al.	
Change(s) applied to document, /C.C.B./ 10/4/2016	27	6225109	B1	~~1999-05-04~~ 05/2001	Juncosa et al.	
	28	6110709	A	2000-08-29	Ausubel et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code*	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/540,917	01/17/2017	9546399	NUGN-001/01US 301735-2003	7076

58249 7590 12/28/2016
COOLEY LLP
ATTN: Patent Group
1299 Pennsylvania Avenue, NW
Suite 700
Washington, DC 20004

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Douglas AMORESE, Los Altos, CA;
Nugen Technologies, Inc., San Carlos, CA
Jonathan Scolnick, San Francisco, CA;
Ben Schroeder, San Mateo, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: NuGen Technologies, Inc.

Application No./Patent No.: 9,546,399 Filed/Issue Date: January 17, 2017

Titled: **COMPOSITIONS AND METHODS FOR IDENTIFICATION OF A DUPLICATE SEQUENCING READ**

NuGen Technologies, Inc., a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____ (%). Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 034604, Frame 0190, or for which a copy thereof is attached.

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.☐ Additional documents in the chain of title are listed on a supplemental sheet(s).☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.**[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]**

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature /Thomas C. Meyers/_____
Date September 15, 2017_____
Printed or Typed Name Thomas C. Meyers_____
Title or Registration Number 36,989

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

21710

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

21710

OR

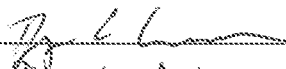
☐	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: NUGEN TECHNOLOGIES, INC.
201 INDUSTRIAL ROAD
SAN CARLOS, CA 94070

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/86 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	Sept 11, 2017
Name	Douglas A. Amorese	Telephone	650 590-3615
Title	Chief Scientific Officer - NUGEN Technologies		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	30366188
Application Number:	14540917
International Application Number:	
Confirmation Number:	7076
Title of Invention:	COMPOSITIONS AND METHODS FOR IDENTIFICATION OF A DUPLICATE SEQUENCING READ
First Named Inventor/Applicant Name:	Douglas AMORESE
Customer Number:	58249
Filer:	Thomas C. Meyers
Filer Authorized By:	
Attorney Docket Number:	NUGN-001/01US 301735-2003
Receipt Date:	15-SEP-2017
Filing Date:	13-NOV-2014
Time Stamp:	15:50:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	NUGN-001_01US_POA.pdf	83071	no	1
			d92d60087b0288c1659936c411f758ac9ed8b45b		

Warnings:

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	NUGN-001_01US_Statement_of_Ownership.pdf	110826 c83707425c2604bae4e8e41ffb9c979e92084150	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			193897		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/540,917	11/13/2014	Douglas AMORESE	NUGN-001/01US 301735-2003

21710
BROWN RUDNICK LLP
ONE FINANCIAL CENTER
BOSTON, MA 02111

CONFIRMATION NO. 7076
POA ACCEPTANCE LETTER



Date Mailed: 09/21/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/15/2017.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sleutchit/



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/540,917	11/13/2014	Douglas AMORESE	NUGN-001/01US 301735-2003

58249
COOLEY LLP
ATTN: Patent Group
1299 Pennsylvania Avenue, NW
Suite 700
Washington, DC 20004

CONFIRMATION NO. 7076
POWER OF ATTORNEY NOTICE



Date Mailed: 09/21/2017

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/15/2017.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sleutchit/



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE	REQUEST ID
14/540,917	11/13/2014	Douglas AMORESE	NUGN-001/01US 301735-2003	196127

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 10/03/2023 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

☒ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Adam M. Schoen/
Name:	Adam M. Schoen
Registration Number:	58576