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- (71) **Applicant:** MEDLMMUNE, LLC [US/US]; One Medimmune Way, Gaithersburg, MD 20878 (US).
- (72) **Inventors:** KUZIORA, Michael; C/o Medimmune, Llc, One Medimmune Way, Gaithersburg, MD 20878 (US). YAO, Yihong; C/o Medimmune, Llc, One Medimmune Way, Gaithersburg, MD 20878 (US). RANADE, Koushtubh; C/o Medimmune, Llc, One Medimmune Way, Gaithersburg, MD 20878 (US). BROHAWN, Philip, Z.; C/o Medimmune, Llc, One Medimmune Way, Gaithersburg, MD 20878 (US). STREICHER, Katie; C/o Medimmune, Llc, One Medimmune Way, Gaithersburg, MD 20878 (US).
- (74) **Agents:** DISE, Rebecca S. et al.; Medimmune, LLC, One Medimmune Way, Gaithersburg, MD 20878 (US).
- (81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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- Published:**
- with international search report (Art. 21(3))
 - with sequence listing part of description (Rule 5.2(a))

[Continued on next page]

(54) **Title:** COMPOSITIONS AND METHODS FOR IDENTIFYING B CELL MALIGNANCIES RESPONSIVE TO B CELL DEPLETING THERAPY

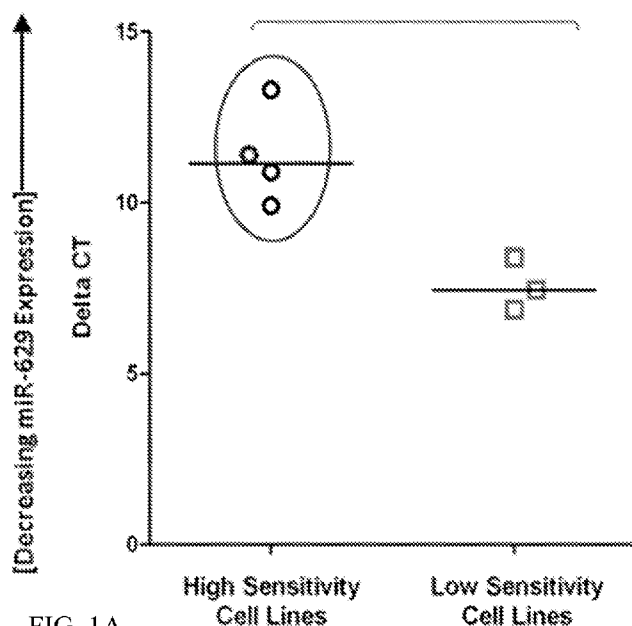


FIG. 1A

(57) **Abstract:** The invention provides compositions and methods featuring the use of miR-629 for identifying subjects responsive to B-cell depleting therapies (e.g., treatment with an anti-CD19 antibody). In other embodiments, the invention features the use of miR-629 to identify subjects as having a B cell malignancy.



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26 November 2015

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US15/18768

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - C12Q 1/68; G01N 33/574; C12N 15/09 (2015.01)

CPC - C12Q 2600/178, 1/6886, 2600/158, 1/6883; G01N 33/57484

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8): C12Q 1/68; G01N 33/574; C12N 15/09 (2015.01)

CPC: C12Q 2600/178, 1/6886, 2600/158, 1/6883; G01N 33/57484

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)

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); Google; Google Scholar; EBSCO; PubMed; 'miR-629,' caner, 'B-Cell,' 'CD19,' antibody, primer, 'B-cell lymphoma'

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010/0173288 A1 (ZHANG, C et al.) July 8, 2010; abstract; Claim 30	22
Y	DILISIO, L et al. MicroRNA Signatures In B-Cell Lymphomas. Blood Cancer Journal. 17 February 2012. Vol. 2 No. e57; pages 1-9; abstract; page 6, figure 3. DOI: 10.1038/bcj.2012.1.	1-9, 23, 30-32
Y	US 2008/0138336 A1 (DAMSCHRODER, M et al.) June 12, 2008; abstract; paragraphs [0510]-[0512]	1-9, 23-29
Y	HATZIAPOSTOLOU, M et al. An HNF4alpha-miRNA Inflammatory Feedback Circuit Regulates Hepatocellular Oncogenesis. Cell. 09 December 2011. Vol. 147, No. 6, pp 1233-1247; page 1236, Figure 2F; page 1236, left column, first paragraph; doi: 10.1016/j.cell.2011.10.043	24-29
Y	FERRAJOLI, A et al. Prognostic Value Of miR-155 In Individuals With Monoclonal B-cell Lymphocytosis And Patients With B Chronic Lymphocytic Leukemia. Blood. 12 September 2013. Vol. 122, No. 11, pp 1891-1899; abstract; doi: 10.1182/blood-2013-01-478222	30-32



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

18 May 2015 (18.05.2015)

Date of mailing of the international search report

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Facsimile No. 571-273-8300

Authorized officer

Shane Thomas

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US15/18768

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☒ Claims Nos.: 10-21
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.