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(71) Applicant: ALECTOR LLC [US/US]; 953 Indiana Street, San Francisco, CA 94107 (US).

(72) Inventors: ROSENTHAL, Arnon; 150 Normandy Lane, Woodside, CA 94062 (US). MONROE, Kate; c/o Alector LLC, 953 Indiana Street, San Francisco, CA 94107 (US). AVOGADRI-CONNORS, Francesca; c/o Alector LLC, 953 Indiana Street, San Francisco, CA 94107 (US).

(74) Agents: ZHOU, Jie et al.; Morrison & Foerster LLP, 425 Market Street, San Francisco, CA 94105-2482 (US).

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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))

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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(88) Date of publication of the international search report:

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(54) Title: ANTI-CD33 ANTIBODIES AND METHODS OF USE THEREOF

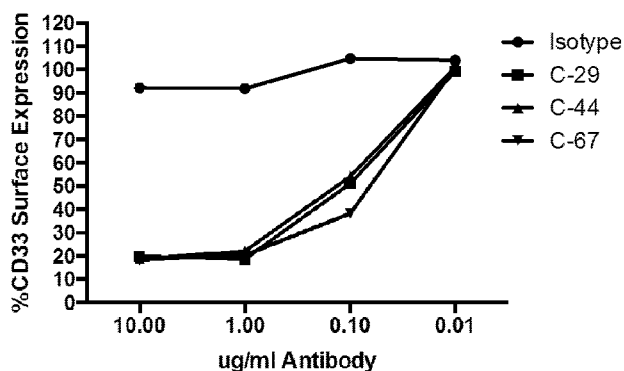


FIG. 12B

(57) Abstract: The present disclosure is generally directed to compositions that include antibodies, e.g., monoclonal, chimeric, humanized antibodies, antibody fragments, etc., that specifically bind on or more epitopes within a CD33 protein, e.g., human CD33 or a mammalian CD33, and use of such compositions in preventing, reducing risk, or treating an individual in need thereof.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2016/037109

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K16/28 C07K16/00 A61K39/00
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)
C07K A61K

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, 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	ERIKA A EKSIÖGLU ET AL: "Novel Therapeutic Approach to Improve Hematopoiesis By Targeting Myeloid Derived Suppressor Cells with a Humanized Anti-CD33 Antibody", BLOOD, AMERICAN SOCIETY OF HEMATOLOGY, US, vol. 124, 1 January 2014 (2014-01-01), page 4597, XP009191679, ISSN: 0006-4971	1,2,5,6, 9-12,17, 21-24
Y	page 1 - page 4	3,4,7,8, 13-16, 18-20
Y	WO 2012/045752 A1 (BOEHRINGER INGELHEIM INT [DE]; KONOPITZKY RENATE [AT]; BORGES ERIC [AT] 12 April 2012 (2012-04-12) claim all; figure all; example all; table all	3,4,7,8, 13-16, 18-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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20 September 2016

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Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Fellows, Edward

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2016/037109

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 102 952 191 A (UNIV ZHEJIANG) 6 March 2013 (2013-03-06) page 2 - page 15	3,4,7,8, 13-16, 18-20
Y	----- SUTHERLAND MAY KUNG ET AL: "Anti-leukemic activity of lintuzumab (SGN-33) in preclinical models of acute myeloid leukemia", MABS, LANDES BIOSCIENCE, US, vol. 1, no. 5, 1 September 2009 (2009-09-01), pages 481-490, XP009142398, ISSN: 1942-0862 page 482 - page 487 -----	3,4,7,8, 13-16, 18-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2016/037109

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2012045752	A1	12-04-2012	AR 083293 A1 13-02-2013
			AU 2011311575 A1 28-03-2013
			BR 112013007944 A2 21-06-2016
			CA 2809925 A1 12-04-2012
			CL 2013000669 A1 14-02-2014
			CN 103261227 A 21-08-2013
			CO 6710907 A2 15-07-2013
			EA 201300419 A1 30-10-2013
			EC SP13012597 A 31-07-2013
			EP 2625201 A1 14-08-2013
			GE P20166429 B 10-02-2016
			HK 1184165 A1 29-07-2016
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			KR 20130119925 A 01-11-2013
			MA 34546 B1 02-09-2013
			NZ 607969 A 29-08-2014
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			UA 112062 C2 25-07-2016
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			UY 33647 A 30-04-2012
			WO 2012045752 A1 12-04-2012

CN 102952191	A	06-03-2013	NONE

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2016/037109

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

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

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2016/037109

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

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

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

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

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

see additional sheet

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

1-24

Remark on Protest

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

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-24

Human anti-CD33 antibody and related subject-matter.

2-82. claims: 25-114(partially)

Human anti-CD33 antibody and related subject-matter wherein the antibody is either C1-C20, C22-C45, C47, C50, C51, C56, C57, C59-C70, C72-C73, C75-C79, C83, C84, C87-C95, C109 and C21
