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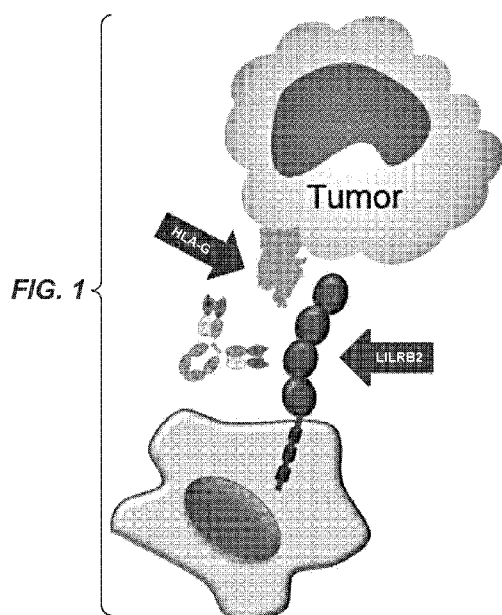
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(81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, 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.

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,

- (54) **Title:** ANTIBODIES TO LILRB2

(57) **Abstract:** Provided herein are various embodiments relating to antibodies that bind LILRB2. Anti-LILRB2 antibodies can be used in methods to treat disease, for example, cancer.



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

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))*
- *with sequence listing part of description (Rule 5.2(a))*

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

08 August 2019 (08.08.2019)

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2018/066819

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07K16/28 C12Q1/6851
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 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, 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 2016/111947 A2 (JOUNCE THERAPEUTICS INC [US]) 14 July 2016 (2016-07-14)	1-86, 91-96
Y	claims 9-14; figure 8; examples 7, 8	1-86, 91-96
X	----- Anonymous: "Data-sheet: Human LILRB2/CD85d/ILT4 Antibody Monoclonal Mouse IgG2A Clone # 287219 Catalog Number: MAB2078", 1 January 2016 (2016-01-01), R&D Systems, XP055555256, pages 1-2, the whole document	1-86, 91-96
Y	----- -/--	1-86, 91-96



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

17 April 2019

Date of mailing of the international search report

05/07/2019

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2018/066819

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2016/144728 A2 (UNIV TEXAS [US]) 15 September 2016 (2016-09-15)	1-86, 91-96
Y	figures 6, 20-22	1-86, 91-96

X	Anonymous: "Invitrogen Data sheet: CD85d (ILT4) Monoclonal Antibody (42D1), Functional Grade, eBioscience Catalog Number 16-5149-85", Thermo Fisher Scientific 1 January 2015 (2015-01-01), XP002788854, Retrieved from the Internet: URL: https://www.thermofisher.com/order/genome-database/generatePdf?productName=CD85d%20(ILT4)&assayType=PRANT&detailed=true&productId=16-5149-85 [retrieved on 2019-02-11]	1-86, 91-96
Y	the whole document	1-86, 91-96

Y	WILLIAM VAN DER TOUW ET AL: "LILRB receptor-mediated regulation of myeloid cell maturation and function", CANCER IMMUNOLOGY, IMMUNOTHERAPY, vol. 66, no. 8, 21 June 2017 (2017-06-21), pages 1079-1087, XP055555740, Berlin/Heidelberg ISSN: 0340-7004, DOI: 10.1007/s00262-017-2023-x p 1083, rhc, par 2	80-85, 91-96

Y	MADDALENA MARCHESI ET AL: "HLA-dependent tumour development: a role for tumour associate macrophages?", JOURNAL OF TRANSLATIONAL MEDICINE, vol. 11, no. 1, 6 October 2013 (2013-10-06), page 247, XP055555722, ISSN: 1479-5876, DOI: 10.1186/1479-5876-11-247 paragraph [introduction]; tables 2, 3	80-85, 91-96

A	WO 2015/179633 A1 (HUTCHINSON FRED CANCER RES [US]; UNIV TEXAS [US]) 26 November 2015 (2015-11-26) par 143, 167, 144, 198-201; examples 1-3	1-86, 91-96

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2018/066819

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	M. DENG ET AL: "A motif in LILRB2 critical for Angptl2 binding and activation", BLOOD, vol. 124, no. 6, 7 August 2014 (2014-08-07), pages 924-935, XP055204710, ISSN: 0006-4971, DOI: 10.1182/blood-2014-01-549162 -----	1-86, 91-96

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2018/066819

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2016111947 A2	14-07-2016	US 2016200815 A1 WO 2016111947 A2	14-07-2016 14-07-2016
WO 2016144728 A2	15-09-2016	AU 2016229201 A1 CA 2977544 A1 CN 107530402 A EP 3265113 A2 JP 2018510340 A KR 20170123323 A US 2018086829 A1 WO 2016144728 A2	14-09-2017 15-09-2016 02-01-2018 10-01-2018 12-04-2018 07-11-2017 29-03-2018 15-09-2016
WO 2015179633 A1	26-11-2015	AU 2015264120 A1 CA 2948871 A1 EP 3146041 A1 JP 2017517259 A KR 20170007449 A US 2017260508 A1 WO 2015179633 A1	24-11-2016 26-11-2015 29-03-2017 29-06-2017 18-01-2017 14-09-2017 26-11-2015

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/066819

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.:

1-86, 91-96

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: 1-86, 91-96

Anti-LILRB2 antibodies and their use

2. claims: 87-90

Oligonucleotide qPCR primers and their use for detecting
LILRB2 expression
