

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference ALGN01001WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2018/035492	International filing date (<i>day/month/year</i>) 31 May 2018 (31-05-2018)	(Earliest) Priority Date (<i>day/month/year</i>) 2 June 2017 (02-06-2017)
Applicant PFIZER INC.		

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

This international search report consists of a total of 7 sheets.

☒

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

1. **Basis of the report**

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

☒

the international application in the language in which it was filed

☐

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

b. ☐

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

c. ☒

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

2. ☐

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

3. ☐

Unity of invention is lacking (see Box No III)

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

☒

the text is approved as submitted by the applicant

☐

the text has been established by this Authority to read as follows:

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

☒

the text is approved as submitted by the applicant

☐

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

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

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒

as suggested by the applicant

☐

as selected by this Authority, because the applicant failed to suggest a figure

☐

as selected by this Authority, because this figure better characterizes the invention

b. ☐

none of the figures is to be published with the abstract

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

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing:
- a. ☒ forming part of the international application as filed:
- ☒ in the form of an Annex C/ST.25 text file.
- ☐ on paper or in the form of an image file.
- b. ☐ furnished together with the international application under PCT Rule 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:

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A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K16/28 A61K35/17 C07K14/725
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, WPI Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2017/053889 A2 (PREC IMMUNOTHERAPY INC [US]) 30 March 2017 (2017-03-30) paragraph [0011] - paragraph [0014] figure 1 paragraph [0015] ----- -/--	1-87



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

20 July 2018

Date of mailing of the international search report

02/08/2018

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CHRISTOPHER DANIEL CHIEN ET AL: "Preclinical Development of FLT3-Redirected Chimeric Antigen Receptor T Cell Immunotherapy for Acute Myeloid Leukemia", BLOOD, , vol. 128, no. 22 2 December 2016 (2016-12-02), page 1, XP002779137, Retrieved from the Internet: URL:http://www.bloodjournal.org/content/128/22/1072?sso-checked=true [retrieved on 2016-12-02] the whole document	1-87
A	----- WO 2009/155015 A1 (IMCLONE LLC [US]; LI YIWEN [US]; LU DAN [US]; SURGULADZE DAVID [US]; T) 23 December 2009 (2009-12-23) page 11, lines 7-10 page 40, line 4 - page 41, line 18 page 42, line 13 - page 43, line 2 page 45, line 3 - page 46, line 30 page 47, line 7 - page 48, line 14 -----	1-87
A	M HOFMANN ET AL: "Generation, selection and preclinical characterization of an Fc-optimized FLT3 antibody for the treatment of myeloid leukemia", LEUKEMIA, vol. 26, no. 6, 1 June 2012 (2012-06-01), pages 1228-1237, XP55041249, ISSN: 0887-6924, DOI: 10.1038/leu.2011.372 page 1230, left-hand column, paragraph 6 -----	1-87
X	CHEN L ET AL: "Targeting FLT3by chimeric antigen receptor T cells for the treatment of acute myeloid leukemia", LEUKEMIA,, vol. 31, 12 May 2017 (2017-05-12), pages 1830-1834, XP002777770, the whole document ----- -/--	1-87

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	JETANI HARDIKKUMAR ET AL: "CAR T-cells targeting FLT3 have potent activity against FLT3-ITD+AML and act synergistically with the FLT3-inhibitor crenolanib", LEUKEMIA, MACMILLAN PRESS LTD, US, vol. 32, no. 5, 5 February 2018 (2018-02-05), pages 1168-1179, XP036497310, ISSN: 0887-6924, DOI: 10.1038/S41375-018-0009-0 [retrieved on 2018-02-05] abstract page 1169, right-hand column, paragraph 2 -----	1-87
A,P	WO 2017/173410 A1 (AMGEN INC [US]) 5 October 2017 (2017-10-05) paragraph [0018] - paragraph [0039] paragraph [0221] - paragraph [0270] -----	1-87
E	WO 2018/119279 A1 (US HEALTH [US]) 28 June 2018 (2018-06-28) page 47 - page 51; examples 1,2 -----	1-87
A	B. PHILIP ET AL: "A highly compact epitope-based marker/suicide gene for easier and safer T-cell therapy", BLOOD, vol. 124, no. 8, 21 August 2014 (2014-08-21), pages 1277-1287, XP055229811, US ISSN: 0006-4971, DOI: 10.1182/blood-2014-01-545020 abstract page 1278, left-hand column, paragraph 2 page 1278, left-hand column, paragraph 3 page 1279, right-hand column, paragraph 2 -----	1-87
A	WO 2016/120216 A1 (CELLECTIS [FR]; RINAT NEUROSCIENCE CORP [US]) 4 August 2016 (2016-08-04) claims 1-17, 31 -----	1-87
A	WO 2014/011988 A2 (UNIV PENNSYLVANIA [US]) 16 January 2014 (2014-01-16) the whole document -----	1-87

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Information on patent family members

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