

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference B12684A-AD/H	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2018/073253	International filing date (<i>day/month/year</i>) 29 August 2018 (29-08-2018)	(Earliest) Priority Date (<i>day/month/year</i>) 29 August 2017 (29-08-2017)
Applicant OSE IMMUNOTHERAPEUTICS		

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 6 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. _____
 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

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/073253

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K16/28 C12N5/00
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 C12N
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,P	WO 2017/149394 A1 (OSE IMMUNOTHERAPEUTICS [FR]) 8 September 2017 (2017-09-08) abstract, p. 3 line 5 - p. 10 line 13, p. 31 line 17 - p. 46 last line of the Table, claims ----- -/--	1-20

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Date of the actual completion of the international search 21 September 2018	Date of mailing of the international search report 04/10/2018
---------------------------------------------------------------------------------------	-------------------------------------------------------------------------

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 Hermann, Patrice
----------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/073253

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>S. TOUIL ET AL: "Depletion of T regulatory cells through selection of CD127-positive cells results in a population enriched in memory T cells: implications for anti-tumor cell therapy", HAEMATOLOGICA, THE HEMATOLOGY JOURNAL : OFFICIAL ORGAN OF THE EUROPEAN HEMATOLOGY ASSOCIATION, vol. 97, no. 11, 1 November 2012 (2012-11-01), pages 1678-1685, XP055419575, IT ISSN: 0390-6078, DOI: 10.3324/haematol.2011.056374 abstract, p. 1679 left-hand column second full paragraph - fourth full paragraph and right-hand column second and third full paragraphs, p. 1680 left-hand column first and second full paragraphs, right-hand column last full paragraph, paragraph bridging p. 1681 to p. 1682 - p. 1683 left-hand column first full paragraph, p. 1684 left-hand column first full paragraph - right-hand column first full paragraph and Fig. 1-4</p> <p style="text-align: center;">-----</p>	1-20
X	<p>NATALIA MAREK ET AL: "The Time Is Crucial for Ex Vivo Expansion of T Regulatory Cells for Therapy", CELL TRANSPLANTATION, vol. 20, no. 11, 1 November 2011 (2011-11-01), pages 1747-1758, XP055083629, ISSN: 0963-6897, DOI: 10.3727/096368911X566217</p> <p style="text-align: center;">-----</p>	1-14,19, 20
A	<p>abstract, p. 1748 paragraph bridging the left- to the right-hand column - right-hand column first full paragraph, Fig. 1, 4, 5 and 6</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">-/--</p>	15-18

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2018/073253

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>VOLKER SCHIRRMACHER: "Cancer-reactive memory T cells from bone marrow: Spontaneous induction and therapeutic potential (Review)", INTERNATIONAL JOURNAL OF ONCOLOGY, vol. 47, no. 6, 12 October 2015 (2015-10-12), pages 2005-2016, XP055434149, GR ISSN: 1019-6439, DOI: 10.3892/ijo.2015.3197 abstract, p. 2 paragraph bridging the left- to the right-hand column - p. 3 left-hand column line 6, p. 4 left-hand column first full paragraph - p. 6 left-hand column line 5, p. 7 right-hand column second full paragraph - p. 9 left-hand column first full paragraph -----</p>	1-20
A	<p>ROBERT F. KUDERNATSCH ET AL: "Human bone marrow contains a subset of quiescent early memory CD8 + T cells characterized by high CD127 expression and efflux capacity : Cellular immune response", EUROPEAN JOURNAL OF IMMUNOLOGY, vol. 44, no. 12, 27 October 2014 (2014-10-27), pages 3532-3542, XP055434147, ISSN: 0014-2980, DOI: 10.1002/eji.201344180 the whole document -----</p>	1-20
A	<p>LIU WEIHONG ET AL: "CD127 expression inversely correlates with FoxP3 and suppressive function of human CD4(+) T reg cells", THE JOURNAL OF EXPERIMENTAL MEDICINE, ROCKEFELLER UNIVERSITY PRESS, US, vol. 203, no. 7, 1 July 2006 (2006-07-01), pages 1701-1711, XP002469608, ISSN: 0022-1007, DOI: 10.1084/JEM.20060772 the whole document -----</p>	1-20
A	<p>EP 2 583 980 A1 (EFFIMUNE [FR]; INST NAT SANTE RECH MED [FR]) 24 April 2013 (2013-04-24) abstract, claim 11; the whole document -----</p>	1-20
	-/--	

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/073253

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	NICOLAS A. GIRALDO ET AL: "Tumor-Infiltrating and Peripheral Blood T-cell Immunophenotypes Predict Early Relapse in Localized Clear Cell Renal Cell Carcinoma", CLINICAL CANCER RESEARCH, vol. 23, no. 15, 1 August 2017 (2017-08-01), pages 4416-4428, XP055420162, US ISSN: 1078-0432, DOI: 10.1158/1078-0432.CCR-16-2848 the whole document	1-20
A	----- EP 2 955 196 A1 (EFFIMUNE [FR]) 16 December 2015 (2015-12-16) the whole document	1-20
A	----- SANDER KELDERMAN ET AL: "Antigen-specific TIL therapy for melanoma: A flexible platform for personalized cancer immunotherapy", EUROPEAN JOURNAL OF IMMUNOLOGY, vol. 46, no. 6, 3 May 2016 (2016-05-03), pages 1351-1360, XP055431343, ISSN: 0014-2980, DOI: 10.1002/eji.201545849 the whole document	1-20
A	----- YOSR HICHERI ET AL: "Donor Regulatory T Cells Identified by FoxP3 Expression but Also by the Membranous CD4+CD127low/neg Phenotype Influence Graft-versus-tumor Effect After Donor Lymphocyte Infusion :", JOURNAL OF IMMUNOTHERAPY, vol. 31, no. 9, 1 November 2008 (2008-11-01), pages 806-811, XP055508760, US ISSN: 1524-9557, DOI: 10.1097/CJI.0b013e318184908d the whole document	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2018/073253

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2017149394	A1	08-09-2017	AU 2017225495 A1 23-08-2018
			CA 3014313 A1 08-09-2017
			WO 2017149394 A1 08-09-2017

EP 2583980	A1	24-04-2013	EP 2583980 A1 24-04-2013
			EP 2768860 A1 27-08-2014
			EP 3299392 A1 28-03-2018
			JP 2014532074 A 04-12-2014
			JP 2017184753 A 12-10-2017
			US 2014308281 A1 16-10-2014
			WO 2013056984 A1 25-04-2013

EP 2955196	A1	16-12-2015	AU 2015273532 A1 22-12-2016
			BR 112016028755 A2 14-11-2017
			CA 2950823 A1 17-12-2015
			CL 2016003172 A1 14-07-2017
			CN 106715471 A 24-05-2017
			CR 20160576 A 08-05-2017
			EA 201692460 A1 28-04-2017
			EP 2955196 A1 16-12-2015
			EP 3155014 A1 19-04-2017
			HK 1231487 A1 22-12-2017
			JP 2017522903 A 17-08-2017
			KR 20170019417 A 21-02-2017
			PE 03242017 A1 01-04-2017
			PH 12016502445 A1 06-03-2017
			SG 11201610036P A 29-12-2016
			TN 2016000528 A1 04-04-2018
US 2017129959 A1 11-05-2017			
WO 2015189302 A1 17-12-2015			
