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(71) Applicants: **THE FRANCIS CRICK INSTITUTE LIMITED** [GB/GB]; 1 Midland Road, London NW1 1AT (GB). **ENARA BIO LIMITED** [GB/GB]; Magdalen Centre, The Oxford Science Park, 1 Robert Robinson Avenue, Oxford OX4 4GA (GB).

(72) Inventors: **KASSIOTIS, George**; c/o The Francis Crick Institute Ltd, 1 Midland Road, London NW1 1AT (GB). **YOUNG, George**; c/o The Francis Crick Institute Ltd, 1 Midland Road, London NW1 1AT (GB). **ATTIG, Jan**; c/o The Francis Crick Institute Ltd, 1 Midland Road, London NW1 1AT (GB). **MARINO, Fabio**; c/o Enara Bio Limited, Magdalen Centre, The Oxford Science Park, 1 Robert Robinson Avenue, Oxford OX4 4GA (GB).

(74) Agent: **TEUTEN, Andrew** et al.; Sagittarius IP, Marlow International, Parkway, Marlow Buckinghamshire SL7 1YL (GB).

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(54) Title: NOVEL CANCER ANTIGENS AND METHODS

(57) Abstract: There are disclosed inter alia polypeptides and nucleic acids encoding said polypeptides which are useful in the treatment, prevention and diagnosis of cancer, particularly melanoma, especially cutaneous melanoma and uveal melanoma.



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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER INV. A61K39/00 A61K39/12 A61K38/00 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) 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, EMBASE, FSTA		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2005/099750 A1 (UNIV GOETTINGEN GEORG AUGUST [DE]; KRONE BERND [DE] ET AL.) 27 October 2005 (2005-10-27) cited in the application	1,3-5, 8-25, 30-33, 35,36, 40,41, 43,44
Y	p.3 1.26-p.4 1.15 p.10 1.16-p.11 1.13 p.20 1.21- p.21 1.7	42, 45-56, 59-66
A	----- -/--	2,6,7
☒ 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 December 2020		Date of mailing of the international search report 18/01/2021
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 Bonello, Steve

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2020/051592

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.:
1-57, 59-66
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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.1 and/or 9.

2. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.1 and/or 10.

3. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.2 and/or 11.

4. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.2 and/or 12.

5. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.2 and/or 13.

6. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.2 and/or 14.

7. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.3 and/or 15.

8. claims: 1-58, 60-62(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.4 and/or 16.

9. claims: 1-58, 60-62(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.4 and/or 17

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

10. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.5
and/or 18.

11. claims: 1-58, 60-62(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.6
and/or 19.

12. claims: 1-58, 60-62(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.6
and/or 20.

13. claims: 1-58, 60-62(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.7
and/or 21.

14. claims: 1-57, 59-66(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.8
and/or 22.

15. claims: 1-58, 60, 61(all partially)

An isolated polypeptide comprising the sequence SEQ ID NO.6
and/or 39.

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2020/051592

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 2006/119527 A2 (GREENHILLS BIOTECHNOLOGY RES D [AT]; MAYER BERND [AT] ET AL.) 16 November 2006 (2006-11-16) cited in the application	1,3-5, 8-25, 30-33, 35,36, 40,41, 43,44,57
Y	p.1 par.2, 3, p.3 par.2 - p.4 par.1, p.5 par.2,3, p.6 par.5 - p.7 par.3, p.8 par.3, p.9 par.3-5	42, 45-56, 59-66
A		2,6,7
X	----- P.F. FERRUCCI ET AL: "Newly Identified Tumor Antigens as Promising Cancer Vaccine Targets for Malignant Melanoma Treatment", CURRENT TOPICS IN MEDICINAL CHEMISTRY, vol. 12, no. 1, 1 January 2012 (2012-01-01), pages 11-31, XP055652022, NL ISSN: 1568-0266, DOI: 10.2174/156802612798919213	1,3-5, 8-25
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A		2,6,7
A	----- NORBERT BANNERT ET AL: "HERVs New Role in Cancer: From Accused Perpetrators to Cheerful Protectors", FRONTIERS IN MICROBIOLOGY, vol. 9, 13 February 2018 (2018-02-13), XP055652215, ISSN: 1664-302X, DOI: 10.3389/fmicb.2018.00178 p.2 Fig.1 p.2 col.2 par.4-p.3 col.2 par.2	1-15
X	----- ESCUDIER BERNARD ET AL: "Vaccination of metastatic melanoma patients with autologous dendritic cell (DC) derived-exosomes: results of the first phase I clinical trial", JOURNAL OF TRANSLATIONAL MEDICINE, BIOMED CENTRAL, vol. 3, no. 1, 2 March 2005 (2005-03-02), page 10, XP021009856, ISSN: 1479-5876, DOI: 10.1186/1479-5876-3-10 p.2 col.1 par.1, col.2 par.1, p.4 col.2 par.1 - p.5 col.1 par.3, p.7 col.2 par.2 ----- -/--	1,20-39

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2020/051592

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	US 2010/136518 A1 (HUMER JOHANNES [AT] ET AL) 3 June 2010 (2010-06-03) par.33 -----	59-66

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2020/051592

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2005099750	A1	27-10-2005	AT 533503 T 15-12-2011
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