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62/018,837	30 June 2014 (30.06.2014)	US
62/023,909	13 July 2014 (13.07.2014)	US

(71) Applicant: CAMBRIDGE ENTERPRISE LIMITED
[GB/GB]; The Old Schools, Trinity Lane, Cambridge CB2
1TN (GB).(72) Inventor: FEARON, Douglas; 4 Lloyd Point Drive, Lloyd
Harbor, New York 11743 (US).

(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, 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, LT, 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.

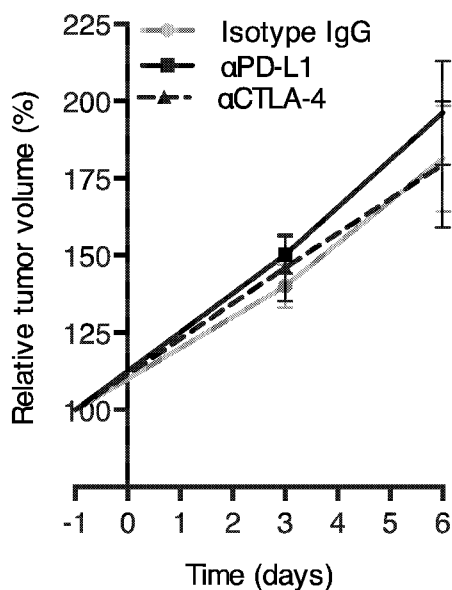
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[Continued on next page]

(54) Title: INHIBITION OF CXCR4 SIGNALING IN CANCER IMMUNOTHERAPY

(57) Abstract: The inventions describes a method for increasing effector T cell accumulation in cancer cell-containing sites of a tumor, comprising administering to a subject in need thereof a pharmaceutically effective amount of an inhibitor of CXCR4 signaling

Figure 1



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TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, (88) Date of publication of the international search report:
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INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2014/063706

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61P35/00 A61K31/395 A61K38/19
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)

EP0-Internal, BIOSIS, CHEM ABS Data, 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 2012/058241 A2 (UNIV SOUTH ALABAMA [US]; SINGH SEEMA [US]; SINGH AJAY P [US]) 3 May 2012 (2012-05-03)	1-16
A	the whole document	23-44
X	Zboralsi, et al.: "Mode of Action of the SDF-1/CXCL12 Inhibiting Spiegelmer (R) NOox-A12 and its Impact on Chronic Lymphocytic Leukemia (CLL) Cell Motility and Chemosensitisation", 10 December 2012 (2012-12-10), XP002733775, Retrieved from the Internet: URL:https://ash.confex.com/ash/2012/webprogram/Paper49301.html [retrieved on 2014-12-15] the whole document	1-17, 23-44
	----- -/-	



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

15 December 2014

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08/04/2015

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

Collura, Alessandra

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2014/063706

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KRYCZEK ILONA ET AL: "Stroma-derived factor (SDF-1/CXCL12) and human tumor pathogenesis", AMERICAN JOURNAL OF PHYSIOLOGY. CELL PHYSIOLOGY, AMERICAN PHYSIOLOGICAL SOCIETY, US, vol. 292, no. 3, 1 March 2007 (2007-03-01), pages C987-C995, XP002471815, ISSN: 0363-6143, DOI: 10.1152/AJPCELL.00406.2006 the whole document page c991, left-hand column, last paragraph	1-18, 23-44
X	US 2011/280874 A1 (SCOTT EDWARD W [US] ET AL) 17 November 2011 (2011-11-17) claims 13, 14, 15, 16	1-18, 23-44
X	WO 2008/018641 A1 (ONO PHARMACEUTICAL CO [JP]; MEDAREX INC [US]; POGUE SARAH L [US]; KORM) 14 February 2008 (2008-02-14) claims 43-48	1-18, 23-44

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2014/063706

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.:

18(completely); 1-17, 23-44(partially)

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: 18(completely); 1-17, 23-44(partially)
anti-CXCL12 antibody for use in the treatment of tumors

2. claims: 1-17, 19, 23-44(all partially)
NOX-A12 for use in the treatment of tumours

3. claims: 1-17, 19, 23-44(all partially)
Tannic acid for use in the treatment of tumors

4. claims: 21(completely); 1-16, 20, 22-44(partially)
Anti-CXCR4 antibody for treating tumors

5. claims: 1-16, 20, 22-44(all partially)
BMS-936564 for use in the treatment of tumors

6. claims: 1-16, 20, 22-44(all partially)
LY2510924 for use in the treatment of tumors

7. claims: 1-16, 20, 22-44(all partially)
AMD3100 for use in the treatment of tumors

8. claims: 1-16, 20, 22-44(all partially)
KRH-3955 for use in the treatment of tumors

9. claims: 1-16, 20, 22-44(all partially)
GSK812397 for use in the treatment of tumors

10. claims: 1-16, 20, 22-44(all partially)
AMD11070 for use in the treatment of tumors

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2014/063706

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2012058241 A2	03-05-2012	US 2013281423 A1 WO 2012058241 A2	24-10-2013 03-05-2012
US 2011280874 A1	17-11-2011	NONE	
WO 2008018641 A1	14-02-2008	EP 2046834 A1 ES 2396220 T3 JP 5244785 B2 JP 2010500005 A TW 200817437 A US 2010158902 A1 WO 2008018641 A1	15-04-2009 20-02-2013 24-07-2013 07-01-2010 16-04-2008 24-06-2010 14-02-2008