

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 July 2010 (01.07.2010)

PCT

(10) International Publication Number
WO 2010/072740 A3

(51) International Patent Classification:
C07K 16/28 (2006.01) *A61P 35/00* (2006.01)
A61K 39/395 (2006.01)

(21) International Application Number:
PCT/EP2009/067706

(22) International Filing Date:
21 December 2009 (21.12.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/140,331 23 December 2008 (23.12.2008) US

(71) Applicant (for all designated States except US): **ASTRAZENECA AB** [SE/SE]; IP Services, SE-151 85 Södertälje (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **EBERLEIN, Catherine Anne** [GB/GB]; 10 Prestbury Avenue, Altrincham Cheshire WA15 8HY (GB). **FOLTZ, Ian** [CA/CA]; 2108 Knightswood Place, Burnaby, British Columbia V5A 4BP (CA). **KANG, Paul** [CA/CA]; Amgen British Columbia Inc., 7990 Enterprise Street, Burnaby, British Columbia V5A 1V7 (CA). **KENDREW, Jane** [GB/GB]; 59 Kings Road, Wilmslow Cheshire SK9 5PW (GB). **AL-FRED, Avril** [CA/CA]; 46493 Armstrong Place, Chilliwack, British Columbia V2R 5W4 (CA). **BARRY, Simon Thomas** [GB/GB]; The Woodlands, Dunwood Lane, Rudyard Staffordshire ST13 8RG (GB).

(74) Agent: **BATES, Rosica Florence**; MedImmune Limited, Milstein Building, Granta Park, Cambridge Cambridgeshire CB21 6GH (GB).

(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, 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, IS, JP, KE, KG, KM, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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:
21 October 2010

(54) Title: TARGETED BINDING AGENTS DIRECTED TO $\alpha 5\beta 1$ AND USES THEREOF

(57) Abstract: The invention relates to targeted binding agents against $\alpha 5\beta 1$ and uses of such agents. More specifically, the invention relates to fully human monoclonal antibodies directed to $\alpha 5\beta 1$. The described targeted binding agents are useful in the treatment of diseases associated with the activity and/or overproduction of $\alpha 5\beta 1$ and as diagnostics.



WO 2010/072740 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/067706

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K16/28 A61K39/395 A61P35/00
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

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 practical, search terms used)

EPO-Internal, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2008/060645 A2 (GENENTECH INC [US]; CHUNTHARAPAI ANAN [US]; PLOWMAN GREG [US]; TESSIER) 22 May 2008 (2008-05-22) examples 5,12, 15,16 claims 50-53	1,3-29
X	JP 2000 080100 A (JAPAN TOBACCO INC) 21 March 2000 (2000-03-21) sequence 4	11,14-28
	----- -/--	

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 document 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

11 August 2010

Date of mailing of the international search report

24/08/2010

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

Bumb, Peter

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/067706

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LEBAKKEN C S ET AL: "Syndecan-1 signals independently of beta1 integrins during Raji cell spreading" 15 September 2000 (2000-09-15), EXPERIMENTAL CELL RESEARCH, ACADEMIC PRESS, US LNKD- DOI:10.1006/EXCR.2000.4981, PAGE(S) 315 - 325 , XP002581491 ISSN: 0014-4827 [retrieved on 2002-03-25] the whole document	1-29
X	WO 2008/007648 A1 (INST ANTIBODIES CO LTD [JP]; SUGIOKA ATSUSHI [JP]; SUGIMOTO MOTOTAKA []) 17 January 2008 (2008-01-17). sequences 535, 25, 28	11,14-20
X	DATABASE GenBank [Online] NCBI; 3 December 2006 (2006-12-03), Brown,G.D., Kaattari,I.M. and Kaattari,S.L.: "Two new Ig VH gene families in Oncorhynchus mykiss" XP002595759 Database accession no. ABH09060 * abstract	11,14-20
X	DATABASE GenBank [Online] 27 August 1997 (1997-08-27), Johnson,T.A.: "IgM heavy chain VH1 region precursor [Homo sapiens]." XP002595760 Database accession no. AAC51686 * abstract	11,14-20
X	WO 2006/020706 A2 (DYAX CORP [US]; WOOD CLIVE R [US]; DRANSFIELD DANIEL T [US]; PIETERS H) 23 February 2006 (2006-02-23) page 180	11,14-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2009/067706

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008060645	A2	22-05-2008	AR 060040 A1 21-05-2008
			AU 2007319757 A1 22-05-2008
			CA 2646611 A1 22-05-2008
			EC SP088835 A 27-11-2008
			EP 1989231 A2 12-11-2008
			JP 2009536921 T 22-10-2009
			KR 20080113246 A 29-12-2008
			US 2009220504 A1 03-09-2009
JP 2000080100	A	21-03-2000	NONE
WO 2008007648	A1	17-01-2008	EP 2078732 A1 15-07-2009
			US 2009203538 A1 13-08-2009
WO 2006020706	A2	23-02-2006	AU 2005272848 A1 23-02-2006
			CA 2576886 A1 23-02-2006
			EP 1789451 A2 30-05-2007
			JP 2008532476 T 21-08-2008