

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 March 2008 (27.03.2008)

PCT

(10) International Publication Number
WO 2008/036341 A3

(51) International Patent Classification:

C07K 16/28 (2006.01) C12N 15/13 (2006.01)
A61K 39/395 (2006.01) A61P 3/08 (2006.01)

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(21) International Application Number:

PCT/US2007/020349

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(22) International Filing Date:

19 September 2007 (19.09.2007)

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH,
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, PG, PH, PL,
PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA,
ZM, ZW.

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/846,202 20 September 2006 (20.09.2006) US
60/968,977 30 August 2007 (30.08.2007) US

(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, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL,
PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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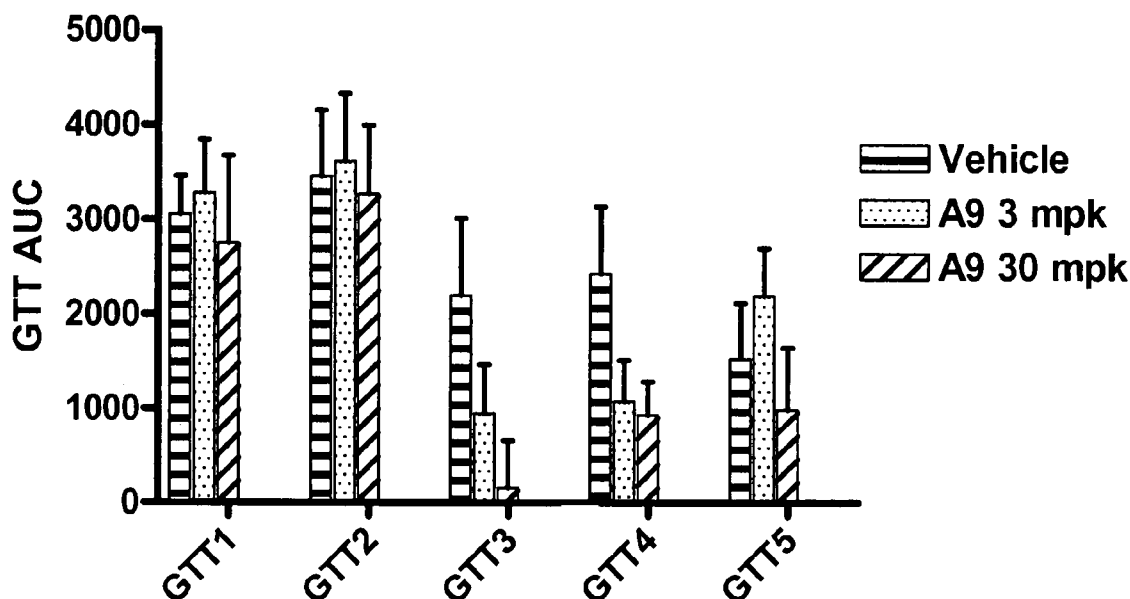
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Published:

— with international search report

[Continued on next page]

(54) Title: COMPOSITIONS AND METHODS RELATING TO GLUCAGON RECEPTOR ANTIBODIES



(57) Abstract: The present disclosure provides compositions and methods relating to antigen binding proteins, in particular, anti-
bodies which specifically bind to the human glucagon receptor. The disclosure provides nucleic acids encoding such antigen binding
proteins and antibodies and methods of making and using such antibodies including methods of treating and preventing type 2 dia-
betes and related disorders by administering such antibodies to a subject in need of such treatment.

WO 2008/036341 A3



— *with sequence listing part of description published separately in electronic form and available upon request from the International Bureau*

(88) Date of publication of the international search report:
5 February 2009

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/020349

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07K16/28 C12N15/13 A61K39/395 A61P3/08

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, CHEM ABS Data, 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	<p>BUGGY J ET AL: "Human glucagon receptor monoclonal antibodies: Antagonism of glucagon action and use in receptor characterization" HORMONE AND METABOLIC RESEARCH, vol. 28, no. 5, 1996, pages 215-219, XP009098472 ISSN: 0018-5043 the whole document</p> <p style="text-align: center;">----- -/--</p>	<p>1-13, 16-21</p>



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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

25 June 2008

Date of mailing of the international search report

28/07/2008

Name and mailing address of the ISA/

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Authorized officer

Bayer, Annette

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/020349

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:

Although claims 22-31 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
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 allsearchable 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.:

1-35 (all partially)
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:

Invention 1: claims 1-35 (all partially)

Antibody A1 as disclosed and characterized by its sequences in the specification and related subject-matter.

Inventions 2-23: claims 1-35 (all partially)

Each of the antibodies A2-A23 as disclosed and characterized by their sequences in the specification and related subject-matter.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/020349

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>WRIGHT L M ET AL: "Structure of Fab hGR-2 F6, a competitive antagonist of the glucagon receptor." ACTA CRYSTALLOGRAPHICA. SECTION D, BIOLOGICAL CRYSTALLOGRAPHY MAY 2000, vol. 56, no. Pt 5, May 2000 (2000-05), pages 573-580, XP002475612 ISSN: 0907-4449 the whole document, especially page 574, left-hand column, third paragraph, right-hand column under item 2.1, discussion</p>	1-13, 16-21
X	<p>----- EP 1 514 932 A (NOVO NORDISK AS [DK]) 16 March 2005 (2005-03-16) paragraphs [0010], [0051] - [0066], [0181], [0182]; claims 1,2,21-26; examples 4-7</p>	1-35
X	<p>----- WO 2006/005469 A (BAYER HEALTHCARE AG [DE]; GOLZ STEFAN [DE]; BRUEGGEMEIER ULF [DE]; GEE) 19 January 2006 (2006-01-19) page 24, line 5 - page 26, line 4 claims 19-21; example 7</p>	1-35
A	<p>----- WO 95/35374 A (DAN MICHAEL D [CA]) 28 December 1995 (1995-12-28) page 25, line 33 - line 37; sequence 26</p>	
A	<p>----- HOLT L J ET AL: "Domain antibodies: proteins for therapy" TRENDS IN BIOTECHNOLOGY, ELSEVIER PUBLICATIONS, CAMBRIDGE, GB, vol. 21, no. 11, November 2003 (2003-11), pages 484-490, XP004467495 ISSN: 0167-7799 abstract page 485-486 under "Biophysical properties"</p>	
A	<p>----- DAVIES J ET AL: "Affinity improvement of single antibody VH domains: residues in all three hypervariable regions affect antigen binding" IMMUNOTECHNOLOGY, ELSEVIER SCIENCE PUBLISHERS BV, NL, vol. 2, no. 3, September 1996 (1996-09), pages 169-179, XP004070292 ISSN: 1380-2933 abstract discussion</p>	
A	<p>----- EP 1 245 676 A (JAPAN TOBACCO INC [JP]) 2 October 2002 (2002-10-02) sequence 12</p>	

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/020349

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>WO 2006/068953 A (ABGENIX INC [US]; ASTRAZENECA AB [SE]; GREEN LARRY L [US]; ZHOU QING []) 29 June 2006 (2006-06-29) page 102, line 2 paragraph [0260]</p> <p style="text-align: center;">-----</p>	
A	<p>WO 2006/081139 A (ABGENIX INC [US]; GREEN LARRY [US]; FAGGIONI RAFFAELLA [US]; FOORD ORI) 3 August 2006 (2006-08-03) page 74, line 3; example 18</p> <p style="text-align: center;">-----</p>	
A	<p>WO 2004/050683 A (ABGENIX INC [US]; BABCOOK JOHN S [CA]; KANG JASPAL S [CA]; FOORD ORIT) 17 June 2004 (2004-06-17) page 81, line 7</p> <p style="text-align: center;">-----</p>	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/020349

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