

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
6 March 2008 (06.03.2008)

PCT

(10) International Publication Number  
**WO 2008/027986 A3**

(51) International Patent Classification:

*C07K 16/00* (2006.01)    *C12N 15/85* (2006.01)  
*C07K 14/705* (2006.01)    *A01K 67/027* (2006.01)  
*C12N 15/62* (2006.01)

(21) International Application Number:

PCT/US2007/077143

(22) International Filing Date: 29 August 2007 (29.08.2007)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/841,890    1 September 2006 (01.09.2006)    US

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(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.

(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).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- 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:

2 May 2008

(54) Title: ENHANCED EXPRESSION OF HUMAN OR HUMANIZED IMMUNOGLOBULIN IN NON-HUMAN TRANSGENIC ANIMALS

(57) Abstract: The present invention describes transgenic animals with human(ized) immunoglobulin loci and transgenes encoding human(ized) Ig $\alpha$  and/or Ig $\beta$  sequences. Of particular interest are animals with transgenic heavy and light chain immunoglobulin loci capable of producing a diversified human(ized) antibody repertoire that have their endogenous production of Ig and/or endogenous Ig $\alpha$  and/or Ig $\beta$  sequences suppressed. Simultaneous expression of human(ized) immunoglobulin and human(ized) Ig $\alpha$  and/or Ig $\beta$  results in normal B-cell development, affinity maturation and efficient expression of human(ized) antibodies.



WO 2008/027986 A3

## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/077143

## A. CLASSIFICATION OF SUBJECT MATTER

INV. C07K16/00 C07K14/705 C12N15/62 C12N15/85 A01K67/027

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 A01K

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, BIOSIS, EMBASE, WPI Data, 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	RETH M: "ANTIGEN RECEPTORS ON B LYMPHOCYTES" ANNUAL REVIEW OF IMMUNOLOGY, ANNUAL REVIEWS INC, US, vol. 10, 1992, pages 97-121, XP009004907 ISSN: 0732-0582 the whole document	1-8, 16-18, 23-31
X	KOYAMA M ET AL: "The novel variants of mb-1 and B29 transcripts generated by alternative mRNA splicing." IMMUNOLOGY LETTERS SEP 1995, vol. 47, no. 3, September 1995 (1995-09), pages 151-156, XP002469004 ISSN: 0165-2478 figure 2	1-8

 Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

15 February 2008

Date of mailing of the international search report

05/03/2008

Name and mailing address of the ISA/

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## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/077143

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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X	<p>WO 01/09187 A (MEDAREX INC [US]; KELER TIBOR [US]; DEO YASHWANT [US])            8 February 2001 (2001-02-08)            page 20, line 16 - page 55, line 13</p>	9-15, 19-22
X	<p>WO 96/33735 A (CELL GENESYS INC [US])            31 October 1996 (1996-10-31)            claims 1-4, 16-21</p>	9-15, 19-22
X	<p>WO 92/03918 A (GENPHARM INT [US])            19 March 1992 (1992-03-19)            cited in the application            claims 53-64</p>	9-15, 19-22
A	<p>KASHIWAMURA S ET AL: "Structure of the murine mb-1 gene encoding a putative sIgM-associated molecule."            JOURNAL OF IMMUNOLOGY (BALTIMORE, MD. : 1950) 1 JUL 1990, vol. 145, no. 1, 1 July 1990 (1990-07-01), pages 337-343, XP002469005            ISSN: 0022-1767            figure 2</p>	1,3
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A	<p>GAULD STEPHEN B ET AL: "B cell antigen receptor signaling: roles in cell development and disease."            SCIENCE (NEW YORK, N.Y.) 31 MAY 2002, vol. 296, no. 5573, 31 May 2002 (2002-05-31), pages 1641-1642, XP002469065            ISSN: 1095-9203            the whole document</p>	1-31

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Information on patent family members

International application No

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