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*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: HUMANIZED RABBIT ANTIBODIES

(57) Abstract: The invention provides methods for producing a modified nucleic acid that encodes a modified a rabbit antibody so that the modified rabbit antibody is less immunogenic in a non-rabbit host than an unmodified parent rabbit antibody. The invention further provides modified nucleic acids made by these methods, as well as vectors and host cells comprising the nucleic acids, and methods for producing the encoded modified antibodies. Also provided are modified rabbit antibodies encoded by subject nucleic acids, and compositions containing the same. The invention further provides kits for carrying out the subject methods.



WO 2004/016740 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/24828

A. CLASSIFICATION OF SUBJECT MATTER																						
IPC(7) : C12N 15/00, 15/09; C07K 16/00; C07H 21/04; A63F 9/24; G06F 9/00																						
US CL : 536/23.1; 435/320.1, 69.6; 530/388.1; 725/133																						
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) U.S. : 536/23.1; 435/320.1, 69.6; 530/388.1; 725/133																						
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) Please See Continuation Sheet																						
C. DOCUMENTS CONSIDERED TO BE RELEVANT																						
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																				
Y	RADER et al. The Rabbit Antibody Repertoire as a Novel Source for the Generation of Therapeutic Human Antibodies. THE JOURNAL OF BIOLOGICAL CHEMISTRY. 05 May 2000, Vol. 275, No. 18, pages 13688-13676, see entire article.	1-9, 13-20																				
Y	STEINBERGER et al. Generation and Characterization of a Recombinant Human CCR5-specific Antibody. THE JOURNAL OF BIOLOGICAL CHEMISTRY. 17 November 2000, Vol. 275, No. 46, pages 36073-36078, see entire article.	1-9, 13-20																				
Y	BENDIG, M.M. Humanization of Rodent Monoclonal Antibodies by CDR Grafting. METHODS: A Companion to Methods in Enzymology. Vol. 8, pages 83-93, 1995, see entire article.	1-9, 13-20																				
Y	US 5,369,641 A (PEDERSON et al) 17 June 1997 (17.06.1997), see entire document.	1-9, 13-20																				
☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.																						
* Special categories of cited documents: <table border="0"> <tr> <td>"A"</td> <td>document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T"</td> <td>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</td> </tr> <tr> <td>"E"</td> <td>earlier application or patent published on or after the international filing date</td> <td>"X"</td> <td>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</td> </tr> <tr> <td>"L"</td> <td>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)</td> <td>"Y"</td> <td>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</td> </tr> <tr> <td>"O"</td> <td>document referring to an oral disclosure, use, exhibition or other means</td> <td>"&"</td> <td>document member of the same patent family</td> </tr> <tr> <td>"P"</td> <td>document published prior to the international filing date but later than the priority date claimed</td> <td></td> <td></td> </tr> </table>			"A"	document defining the general state of the art which is not considered to be of particular relevance	"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	"E"	earlier application or patent published on or after the international filing date	"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	"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)	"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	"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family	"P"	document published prior to the international filing date but later than the priority date claimed		
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"P"	document published prior to the international filing date but later than the priority date claimed																					
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230		Authorized officer Marianne DiBrino, Ph.D. Telephone No. 571-272-1600 <i>Janice Foul for</i>																				

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/24828

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claim Nos.: 10-12
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:
Claim 10 has not been searched because it appears to be missing limitations. Claims 11-12 have not been searched because they lack antecedent basis in the recited base claims.
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

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 fee, this Authority did not invite payment of any additional fee.
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.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

PCT/US03/24828

Continuation of B. FIELDS SEARCHED Item 3:

WEST 2.2, STN(EMBASE, BIOSIS, MEDLINE, CAPLUS, SCISEARCH, PROMT, BIOBUSINESS)

search terms: inventors' names, resurfacing, humanization/ed, d-e loop region, framework, cdr, antibody/ies