Title: METHODS FOR ALTERING T CELL DIVERSITY

Abstract: Methods and materials for enhancing T cell diversity are described. For example, methods that include administering purified populations of B cells or immunoglobulins to subjects in need thereof are provided.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) : A61K 39/395, 35/12; C07K 16/00; C12P 21/08
US CL : 424/130.1, 520; 530/387.1, 388.7, 389.1

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.: 424/130.1, 520; 530/387.1, 388.7, 389.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of data base and, where practicable, search terms used)
EAST, STN, Medline, Capus, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 6,252,055 (BELTON et al.) 26 June 2001 (26.06.2001), especially column 1, lines 5-47; column 2, lines 29-36, 46-59; and column 4, lines 49-59.</td>
<td>14-32</td>
</tr>
<tr>
<td>X</td>
<td>US 5,564,902 (SHOENFELD et al.) 8 October 1996 (08.10.1996), especially abstract; column 9, Example 7; and claims 1-10.</td>
<td>14-32</td>
</tr>
<tr>
<td>X</td>
<td>US 6,231,856 (WILLIAMS) 15 May 2001 (15.05.2001), especially column 6, lines 65-67 and column 7, lines 1-15.</td>
<td>14-32</td>
</tr>
</tbody>
</table>

☐ 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 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

("I" 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

Date of mailing of the international search report
27 March 2006

Name and mailing address of the ISA/AUS
Mail Stop PCT, Attn: ISA/AUS
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Jo Ann Rimaudo
Telephone No. 571-272-1600

Form PCT/ISA/210 (second sheet) (April 2005)
### INTERNATIONAL SEARCH REPORT

**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: Please See Continuation 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 additional fees, this Authority did not invite payment of any 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.:  

**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.
BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Group I, claims 1-13, drawn to a method for enhancing T cell diversity in a subject, comprising administering a polyclonal population of B cells.

Group II, claims 14-28, drawn to a method for enhancing T cell diversity in a subject, comprising administering polyclonal immunoglobulin.

Group III, claims 29-32, drawn to an article of manufacture comprising a polyclonal immunoglobulin or a polyclonal population of B cells and packaging material.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons. The special technical feature of the Group I invention is the step of using polyclonal population of B cells. The special technical feature of the Group II invention is the step of using a polyclonal immunoglobulin, which is cell-free. The special technical feature of the Group III invention is the article of manufacture and not a method for enhancing T cell diversity. Thus the special technical features of the three groups are not the same nor are they corresponding.