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(72) Inventors; and


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Published: before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 6 October 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VACCINE FOR TREATMENT AND PREVENTION OF HERPES SIMPLEX VIRUS INFECTION

(57) Abstract: The present invention relates to methods and compositions for the prevention and treatment of herpes virus infections. The invention provides antigenic peptides, and pharmaceutical compositions comprising complexes of antigenic peptides and adjuvants that can activate an immune response against herpes viruses. The invention also provides methods of making the antigenic peptides and complexes of antigenic peptides and adjuvants. Methods of use of the pharmaceutical compositions are also provided.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : A61K 39/12
US CL : 424/204.1

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. : 424/204.1

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

<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>Y</td>
<td>US 2003/0118611 A1 (KOELLE et al) 26 June 2003 (26.06.2003), see the abstract, and the claims.</td>
<td>1-3, 6-17, 21-48</td>
</tr>
<tr>
<td>Y</td>
<td>US 6,461,615 B1 (SRIVASTAVA) 08 October 2002 (08.10.2002), see the claims.</td>
<td>1-3, 6-17, 21-48</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

*B* 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

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principles 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

"S" document member of the same patent family

Date of the actual completion of the international search: 06 July 2005 (06.07.2005)

Date of mailing of the international search report: 26 JUL 2005

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Form PCT/ISA/210 (second sheet) (January 2004)
INTERNATIONAL SEARCH REPORT

Box No. II  Observations where certain claims were found unsearable (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 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.: 1-3, 6-17 and 21-48

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.

Form PCT/ISA/210 (continuation of first sheet(2)) (January 2004)
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. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1, 16, 17, 21-41, 43, 45, 47, drawn to composition comprising a plurality of different antigenic peptides. (1st product and method)

Group II, claim(s) 2, 3, 6-17, 21, 22-40, 42, 44, 46, 48, drawn to composition comprising a plurality of different purified complexes of a stress protein non-covalently bound to an antigenic peptide. (2nd product and method)

Group III, claim(s) 4-17, 21, 22-40, drawn to composition prepared by a method comprising complexing in vitro a stress protein with at least 20, 30, or 40 antigenic peptides. (3rd product and method)

Group IV, claim(s) 18, 19, 20, drawn to method of preparing a composition for eliciting in a mammal an immune response against HSV-1 or HSV-2.

The inventions listed as Groups I-IV 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 invention of Group I is known in the prior art as evidence by Koelle et al (US 2003/0118611 A1) wherein the reference teaches the product that binds to HLA-binding proteins (see the claims). The cited evidence proves that the technical feature of Group I does not make a contribution over the prior art. Thus, the claims are not so linked by a special technical feature within the meaning of PCT Rule 13.2.

Continuation of B. FIELDS SEARCHED Item 3:
WEST, DERWENT, JPA, EPA, MEDLINE, BIOSIS
search terms: herpes, epitope, heat shock, immune response.