Title: ANTIGENS OF GROUP B STREPTOCOCCUS AND CORRESPONDING DNA FRAGMENTS

Abstract: The present invention relates to antigens, more particularly antigens of Group B Streptococcus (GBS) (S. agalactiae) which may be useful to prevent, diagnose and/or treat streptococcal infections.
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

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.

(88) Date of publication of the international search report:
16 January 2003
**A. CLASSIFICATION OF SUBJECT MATTER**

<table>
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<th>IPC</th>
<th>C12N15/31</th>
<th>C12N15/63</th>
<th>C07K14/315</th>
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<td>G01N33/569</td>
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According to International Patent Classification (IPC) or to both national classification and IPC.

**B. FIELDS SEARCHED**

<table>
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<td>IPC 7  C12N</td>
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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 practical, search terms used):

EPO-Internal, PAJ, SEQUENCE SEARCH, BIOSIS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>P,X</td>
<td>WO 01 32882 A (HANNIFFY SEAN BOSCO; LE PAGE RICHARD WILLIAM FALLA (GB); WELLS JER) 10 May 2001 (2001-05-10) see ID NO: 87; it has 100% homology with SEQ ID NO: 2</td>
<td>1-35</td>
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Further documents are listed in the continuation of box C.

Patent family members are listed in 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

*P** 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: 1 November 2002

Date of mailing of the international search report: 15/11/2002

Name and mailing address of the ISA:
European Patent Office, P.B. 5618 Patentlaan 2 NL-2280 HV Rijswijk
Tel. (+31-70) 940-2040, Tx. 31 651 epos nl,
Fax (+31-70) 940-5016

Authorized officer: Montero Lopez, B
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<tr>
<td>A</td>
<td>LARSSON C ET AL: &quot;Experimental vaccination against group B Streptococcus, an encapsulated bacterium, with highly purified preparations of cell surface proteins Rib and alfa&quot; INFECTION AND IMMUNITY, AMERICAN SOCIETY FOR MICROBIOLOGY, WASHINGTON, US, vol. 63, no. 9, September 1996 (1996-09), pages 3518-3523, XP002109333 ISSN: 0019-9567</td>
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<td>E</td>
<td>WO 02 34771 A (MARGARIT Y ROS IMMACULADA; CHIRON SPA (IT); GRANDI GUIDO (IT); MAS) 2 May 2002 (2002-05-02) SEQ ID NO: 800 has 99.9% homology with SEQ ID NO: 2</td>
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### Box I  Observations where certain claims were found unsearchable (Continuation of item 1 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. [X] Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
   - see FURTHER INFORMATION sheet PCT/ISA/210.

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 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.

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Form PCT/ISA/210 (continuation of first sheet (1)) (July 1998)
Continuation of Box I.1

Although claims 23 to 30 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. Although claims 32 and 33 are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
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