Abstract:
Novel polynucleotide and amino acids of Brachyspira hyodysenteriae are described. These sequences are useful for diagnosis of B. hyodysenteriae disease in animals and as a therapeutic treatment or prophylactic treatment of B. hyodysenteriae disease in animals. These sequences may also be useful for diagnostic and therapeutic and/or prophylactic treatment of diseases in animals caused by other Brachyspira species, including B. intermedia, B. suantatina, B. alvinipulli, B. aalborgi, B. innocens, B. murdochii, and B. pilosicoli.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07K14/20 C12N15/31 A61K39/02 A61K39/40 A61K48/00
C12N1/21 C12N15/63 C12Q1/68 G01N33/569

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

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, Sequence Search, EMBL, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category* Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No.


A WO 2004/007726 A (AKZO NOBEL NV [NL]; ADLER BEN [AU]; CULLEN PAUL ANTONY [AU]; COUTTS SC) 22 January 2004 (2004-01-22) pages 4-8; claims; examples 1-44

A WO 03/095480 A (AKZO NOBEL NV [NL]; ADLER BEN [AU]; CULLEN PAUL ANTONY [AU]; COUTTS SC) 20 November 2003 (2003-11-20) pages 4-8; claims; examples 1-44

X 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

"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
"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
"R" document member of the same patent family

Date of the actual completion of the international search
16 November 2007

Date of mailing of the international search report
06/03/2008

Name and mailing address of the ISA/
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl
Fax: (+31-70) 340-3016

Authorized officer

Steffen, Pierre

Form PCT/ISA/210 (second sheet) (April 2005)
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<td>A</td>
<td>LA TOM ET AL: &quot;Protection of pigs from swine dysentery by vaccination with recombinant BmpB, a 29.7 kDa outer-membrane lipoprotein of Brachyspira hyodysenteriae&quot; VETERINARY MICROBIOLOGY, AMSTERDAM, NL, vol. 102, no. 1-2, 19 August 2004 (2004-08-19), pages 97-109, XP002395514 t ISSN: 0378-1135 cited in the application pages 98-103; table 1</td>
<td>1-44</td>
</tr>
</tbody>
</table>
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. [X] Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

   Although claims 31-37 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.

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:

see additional 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 fees, this Authority did not invite payment of 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. [X] 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.:

   1-44 (all I partly ally)

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.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: claims 1-44 (all partially)

Nucleic acids, plasmids, cells, immunogenic compositions and vaccines comprising the nucleic acids and up to 70% identical sequences thereof, when relating to SEQ ID NO: 1. Proteins, immunogenic compositions and vaccines comprising the proteins and up to 70% homologues thereof as well as antibodies thereto, when relating to SEQ ID NO: 2. Various methods of treatment and medical and diagnostic uses making use of the above nucleic acids and proteins as well as the compositions containing them.

Inventions 2-33: claims 1-44 (all partially)

Nucleic acids, plasmids, cells, immunogenic compositions and vaccines comprising the nucleic acids and up to 70% identical sequences thereof, when relating respectively to SEQ ID NO:s: 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63 or 65. Proteins, immunogenic compositions and vaccines comprising the proteins and up to 70% homologues thereof as well as antibodies thereto, when relating respectively to SEQ ID NO:s: 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64 or 66. Various methods of treatment and medical and diagnostic uses making use of the above nucleic acids and proteins as well as the compositions containing them.
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