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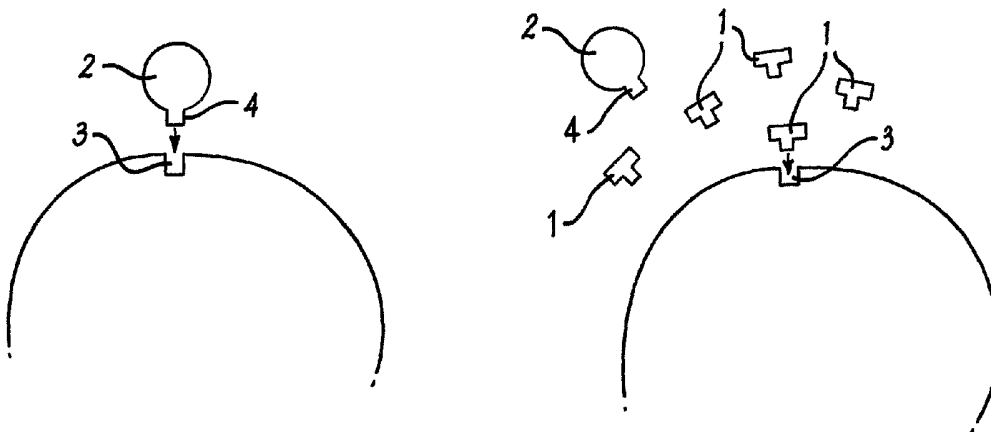
- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:

17 August 2006

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: INHIBITORY ANALOGUES TO BLOCK RECEPTORS FOR MICROBIAL PATHOGENIC DETERMINANTS



(57) Abstract: The present invention relates to inhibitory analogues of virulence factors that are capable of blocking receptors for microbial pathogenic determinants that contribute to disease symptoms, in order to reduce the presence of said symptoms. In particular, it relates to inhibitors that are able to act against the toxic effects of *Clostridium difficile*.

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2005/003836

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K14/33 A61K39/08

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 A61K

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, WPI Data, Sequence Search, PAJ, EMBASE, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SAUERBORN MARKUS ET AL: "The C-terminal ligand-binding domain of Clostridium difficile toxin A (TcdA) abrogates TcdA-specific binding to cells and prevents mouse lethality" FEMS MICROBIOLOGY LETTERS, vol. 155, no. 1, 1 October 1997 (1997-10-01), pages 45-54, XP002383252 ISSN: 0378-1097 the whole document	1-20
X	WO 98/59053 A (QUEEN MARY & WESTFIELD COLLEGE; IMPERIAL COLLEGE OF SCIENCE, TECHNOLOG) 30 December 1998 (1998-12-30) the whole document	1-6, 8-10, 17-20
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☒ 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 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.
"&" document member of the same patent family

Date of the actual completion of the international search

31 May 2006

Date of mailing of the international search report

21/06/2006

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INTERNATIONAL SEARCH REPORT

In International application No
PCT/GB2005/003836

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/61761 A (TECHLAB, INC; DEPARTMENT OF HEALTH AND HUMAN SERVICES) 19 October 2000 (2000-10-19) the whole document -----	1-6, 8-10, 17-20
X	US 2003/129198 A1 (WILKINS TRACY D ET AL) 10 July 2003 (2003-07-10) the whole document -----	1-6, 8-10, 17-20
X	CASTAGLIUOLO IGNAZIO ET AL: "A receptor decoy inhibits the enterotoxic effects of Clostridium difficile Toxin A in rat ileum" GASTROENTEROLOGY, vol. 111, no. 2, 1996, pages 433-438, XP002383253 ISSN: 0016-5085 the whole document -----	1-3,5,6, 8-10, 17-20
X	WARD STEPHEN J ET AL: "Local and systemic neutralizing antibody responses induced by intranasal immunization with the nontoxic binding domain of toxin A from Clostridium difficile" INFECTION AND IMMUNITY, vol. 67, no. 10, October 1999 (1999-10), pages 5124-5132, XP002383254 ISSN: 0019-9567 abstract -----	1-6, 8-10, 17-20
X	KINK J A ET AL: "ANTIBODIES TO RECOMBINANT CLOSTRIDIUM DIFFICILE TOXINS A AND B ARE EFFECTIVE TREATMENT AND PREVENT RELAPSE OF C. DIFFICILE-ASSOCIATED DISEASE IN A HAMSTER MODEL OF INFECTION" INFECTION AND IMMUNITY, AMERICAN SOCIETY FOR MICROBIOLOGY. WASHINGTON, US, vol. 66, no. 5, 1 May 1998 (1998-05-01), pages 2018-2025, XP002912254 ISSN: 0019-9567 the whole document -----	1-6, 8-10, 17-20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2005/003836

Box 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:

Although claims 17-20 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 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:

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

International application No.

PCT/GB2005/003836

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☒ on paper
 - ☒ in electronic form
 - c. time of filing/furnishing
 - ☒ contained in the international application as filed
 - ☐ filed together with the international application in electronic form
 - ☒ furnished subsequently to this Authority for the purpose of search
2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. application No
PCT/GB2005/003836

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9859053	A	30-12-1998	AU 746859 B2 AU 8118598 A EP 1000155 A1	02-05-2002 04-01-1999 17-05-2000
WO 0061761	A	19-10-2000	AU 781027 B2 AU 4337200 A CA 2365914 A1 EP 1165796 A2 JP 2002541808 T	28-04-2005 14-11-2000 19-10-2000 02-01-2002 10-12-2002
US 2003129198	A1	10-07-2003	US 6733760 B1	11-05-2004