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Published:

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- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
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17 December 2009



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(54) Title: USE OF PROKARYOTIC TIR-DOMAIN CONTAINING PROTEINS AS THERAPEUTIC AND DIAGNOSTIC AGENTS

(57) Abstract: The present invention relates *inter alia* to nucleic acid molecules encoding prokaryotic TIR-domain containing polypeptides as well as fragments and functional homologues thereof for diagnostic and therapeutic purposes.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/052203

A. CLASSIFICATION OF SUBJECT MATTER
 INV. A61K38/00 A61K39/00 C07K14/705 C12N15/09

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, Sequence Search, CHEM ABS Data, WPI Data, FSTA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2006/091517 A (CHIRON CORP [US]; PIZZA MARIAGRAZIA [IT]; SERINO LAURA [IT]; BERLANDA) 31 August 2006 (2006-08-31) sequence 234	1-24
X	NEWMAN RUCHI M ET AL: "Identification and characterization of a novel bacterial virulence factor that shares homology with mammalian Toll/interleukin-1 receptor family proteins." INFECTION AND IMMUNITY JAN 2006, vol. 74, no. 1, January 2006 (2006-01), pages 594-601, XP002536696 ISSN: 0019-9567 the whole document	1-24

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 2 October 2009	Date of mailing of the international search report 30/10/2009
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Turri, Matteo
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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2009/052203

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	-& DATABASE EMBL [Online] 20 March 2003 (2003-03-20), "Brucella melitensis 16M chromosome I, section 159 of 195 of the complete sequence." XP002548351 retrieved from EBI accession no. EMBL:AE009602 Database accession no. AE009602 the whole document	1-24
X	----- "Hypothetical protein c2398 [Escherichia coli CFT073]" PROTEIN HOST- PROTEIN, 20 April 2006 (2006-04-20), XP002537072 [retrieved on 2006-04-20] the whole document & DATABASE NCBI [Online] 20 April 2006 (2006-04-20), "Escherichia coli CFT073, complete genome" Database accession no. AAN80857 the whole document & WELCH R A ET AL: "Extensive mosaic structure revealed by the complete genome sequence of uropathogenic Escherichia coli" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE, WASHINGTON, DC, US, vol. 99, no. 26, 24 December 2002 (2002-12-24), pages 17020-17024, XP002283177 ISSN: 0027-8424	1
P,X	----- CIRL CHRISTINE ET AL: "Subversion of Toll-like receptor signaling by a unique family of bacterial Toll/interleukin-1 receptor domain-containing proteins." NATURE MEDICINE APR 2008, vol. 14, no. 4, April 2008 (2008-04), pages 399-406, XP002536697 ISSN: 1546-170X the whole document	1-24
A	----- TURNER JONATHAN D: "A bioinformatic approach to the identification of bacterial proteins interacting with Toll-interleukin 1 receptor-resistance (TIR) homology domains" FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY 10 JUN 2003,, vol. 37, no. 1, 10 June 2003 (2003-06-10), pages 13-21, XP002536706 figure 2	
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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2009/052203

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>SALCEDO SUZANA P ET AL: "Brucella control of dendritic cell maturation is dependent on the TIR-containing protein Btp1." PLOS PATHOGENS 8 FEB 2008, vol. 4, no. 2, 8 February 2008 (2008-02-08), page e21, XP002536699 ISSN: 1553-7374</p> <p style="text-align: center;">-----</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2009/052203

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:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable 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.:

1-24 (partially)

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-8, 10-24 (partially)

All subject-matter relating to SEQ ID NO:1

2. claims: 1-8, 10-24 (partially)

All subject-matter relating to SEQ ID NO:2

3. claims: 1-24 (partially)

All subject-matter relating to SEQ ID NO:3

4. claims: 1-24 (partially)

All subject-matter relating to SEQ ID NO:4

5. claims: 1-24 (partially)

All subject-matter relating to SEQ ID NO:5

6. claims: 1-24 (partially)

All subject-matter relating to SEQ ID NO:8

7. claims: 1-24 (partially)

All subject-matter relating to a combination of SEQ ID
NOs:3, 4 and 5

8. claims: 1-24 (partially)

All subject-matter relating to a combination of SEQ ID
NOs:8, 4 and 5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2009/052203

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006091517 A	31-08-2006	AU 2006216844 A1	31-08-2006
		CA 2598488 A1	31-08-2006
		CN 101180312 A	14-05-2008
		CN 101203529 A	18-06-2008
		EP 1858919 A2	28-11-2007
		JP 2008530245 T	07-08-2008
