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[Continued on next page]

(54) Title: METHODS AND COMPOSITIONS FOR DETECTION OF EHRlichia CHAFFEENSIS (P120)

(57) Abstract: The invention provides methods and compositions for the detection of Ehrlichia chaffeensis.

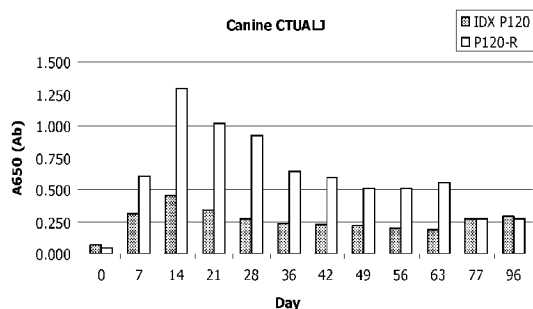


Figure 1A

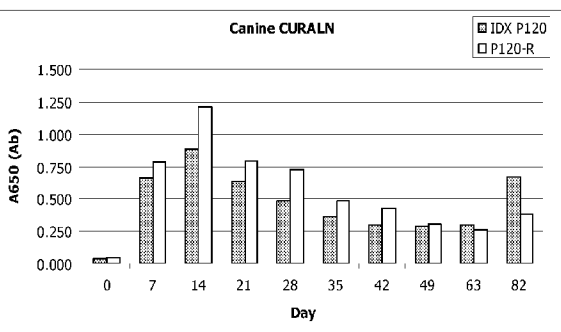


Figure 1B

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Published:

- with international search report (Art. 21(3))
- with sequence listing part of description (Rule 5.2(a))

(88) Date of publication of the international search report:
30 December 2009

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/77078

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - C07K 14/195 (2009.01)

USPC - 530/300

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)

IPC(8) - C07K 14/195 (2009.01)

USPC - 530/300

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC(8) - C07K 14/195 (2009.01) - see keyword below

USPC - 530/300 - see keyword below

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST(USPT,PGPB,EPAB,JPAB); Medline, Google

Search terms: Ehrlichia chaffeensis, polypeptide, amino acid, homologous, spacer, signal, stop, transmembrane domain, link, Cys, carboxy, terminus, purified, isolated, C amino acid

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,015,691 A (WALKER et al.) 18 January 2000 (18.01.2000), col 1, ln 49-52; col 2, ln 60-62; col 3, ln 39-45; col 5, ln 56-58; and col 7, ln 22-23	1 and 3 ----- 4 and 5
Y	US 2006/0211062 A1 (O'CONNOR.) 21 September 2006 (21.09.2006), para [0008], [0012], [0146], and [0167]	4 and 5
A	US 6,043,085 A (YU et al.) 28 March 2000 (28.03.2000)	1 and 3-5

 Further documents are listed in the continuation of Box C.


* 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 application or patent 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

22 April 2009 (22.04.2009)

Date of mailing of the international search report

06 MAY 2009

Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/77078

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:

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. claims 1, 3-5, directed to a purified polypeptide restricted to a polypeptide comprising SEQ ID NO: 1.
 Group II. claim 2, directed to a polynucleotide encoding a polypeptide, restricted to a polypeptide comprising SEQ ID NO: 1.
 Group III. claims 6-13, directed to a method of detecting antibodies that specifically bind to a polypeptide and method of detecting an Ehrlichia infection in a subject using a polypeptide wherein the polypeptide comprises SEQ ID NO: 1.
 Group IV. claims 14, 15, directed to an antibody that specifically binds a polypeptide wherein the polypeptide comprises SEQ ID NO: 1.
 Group V. claims 16-18, directed to a method of detecting a polypeptide in a sample using an antibody specific for the polypeptide wherein the polypeptide comprises SEQ ID NO: 1.

- Please see extra sheet for continuation -

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 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. 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 and 3-5, limited to SEQ ID NO: 1

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.

INTERNATIONAL SEARCH REPORT

International application No.

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Continuation of Box III: Lack of Unity of Invention

The inventions listed as Groups I - V 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 special technical feature of the Group I claims is providing a purified *E. chaffeensis* polypeptide. The special technical feature of the Group II claims is an isolated polynucleotide encoding an *E. chaffeensis* polypeptide. The special technical feature of the Group III claims is a method of detecting an *E. chaffeensis* infection by detecting antibodies to a polypeptide in a subject. The special technical feature of the Group IV claims is an isolated antibody that binds to an *E. chaffeensis* polypeptide. The special technical feature of the Group V claims is a method of detecting an *E. chaffeensis* polypeptide in a sample using an antibody specific for that polypeptide.

Groups I-V share the technical feature that is a polypeptide comprising a core sequence (SEQ ID NO:2). A polypeptide comprising the core sequence SEQ ID NO 2 was known in the prior art (see WO9745540-A1, WALKER, SEQ ID NO: 2). Therefore, there is no "special" technical feature linking Groups I-V. Furthermore, it is noted that the claims encompass a genus of polypeptide species wherein the species are: SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5. The species are related sequences that all comprise the same core sequence (SEQ ID NO: 2). However, a polypeptide comprising the core sequence SEQ ID NO 2 was known in the prior art (see WO9745540-A1, WALKER, SEQ ID NO: 2). Therefore, there is no "special" technical feature for the claimed species.

It is noted that Applicants are entitled to a search of the first claimed Inventive Group and the first claimed species. Applicants may pay an additional fee for each additional Group and for each additional species they would like to have searched.