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- with sequence listing part of description published separately in electronic form and available upon request from the International Bureau

(88) Date of publication of the international search report:
10 July 2008

(54) Title: **EHRlichia CANIS DIVA (DIFFERENTIATE INFECTED FROM VACCINATED ANIMALS)**

(57) Abstract: *Ehrlichia canis* antigens that can be used to differentiate *E. canis* infected animals from animals that have been challenged with *E. canis*, e.g., vaccinated against *E. canis*, are disclosed. The invention also provides compositions and methods for determining the presence of *E. canis* antigens and antibodies.



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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/080373

A. CLASSIFICATION OF SUBJECT MATTER

INV. G01N33/569 C12Q1/68 C07K14/29 A61K31/70

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)

G01N C07K C12Q

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, WPI Data, Sequence Search, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/12688 A (RES DEV FOUNDATION [US]) 9 March 2000 (2000-03-09)	10-17
A	Example 12, Fig 5 and Claim 3, Fig. 3, and claims 13-16	1-9
P,X	----- WO 2006/138509 A (RES DEV FOUNDATION [US]; MCBRIDE JERE W [US]; DOYLE CHRISTOPHER KUYLER) 28 December 2006 (2006-12-28) sequence 22 AND 27	10-17
P,X	----- WO 2006/107924 A (IDEXX LAB INC [US]; KRAH EUGENE REGIS III [US]; BEALL MELISSA [US]) 12 October 2006 (2006-10-12) the whole document	1-17



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.

G document member of the same patent family

Date of the actual completion of the international search

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14/05/2008

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Although claims 16 and 17 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.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/080373

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:
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 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:

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 reportcovers 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 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

Information on patent family members

International application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0012688	A	09-03-2000	AT 328073 T	15-06-2006
			AU 764853 B2	04-09-2003
			AU 5586499 A	21-03-2000
			BR 9913652 A	05-06-2001
			CA 2340462 A1	09-03-2000
			CN 1321190 A	07-11-2001
			EP 1108014 A1	20-06-2001
			JP 2002523087 T	30-07-2002
			MX PA01002042 A	21-06-2002
			NZ 510103 A	29-10-2004
			RU 2232814 C2	20-07-2004
			TW 557326 B	11-10-2003
			US 6043085 A	28-03-2000
			ZA 200101440 A	12-11-2001
WO 2006138509	A	28-12-2006	EP 1891095 A2	27-02-2008
WO 2006107924	A	12-10-2006	AU 2006231473 A1	12-10-2006
			CA 2604855 A1	12-10-2006
			EP 1879914 A2	23-01-2008