PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
P43842WO1/BAF		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/GB2023/050281	8 February 2023 (08-02-2023)	9 February 2022 (09-02-2022)
Applicant		
PETMEDIX LTD		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 11 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of:
      ☒ the international application in the language in which it was filed
      ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. ☒ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box No. II)

3. ☒ **Unity of invention is lacking** (see Box No III)

4. With regard to the **title,**
   ☒ the text is approved as submitted by the applicant
   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   ☒ the text is approved as submitted by the applicant
   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 1
      ☒ as suggested by the applicant
      ☐ as selected by this Authority, because the applicant failed to suggest a figure
      ☐ as selected by this Authority, because this figure better characterizes the invention
   b. ☐ none of the figures is to be published with the abstract

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International application No.

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

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing:

   a. [X] forming part of the international application as filed.

   b. [ ] furnished subsequent to the international filing date for the purposes of international search (Rule 13*ter*.1(a)).

      [ ] accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.

2. [ ] With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this report has been established to the extent that a meaningful search could be carried out without a WIPO Standard ST.26 compliant sequence listing.

3. Additional comments:

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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.: 1-25 (partially)
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:
see FURTHER INFORMATION sheet PCT/ISA/210

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. ☒ 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.:
1-25 (partially)

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.

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International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K16/28 A61P37/06 A61P29/00
ADD.

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 A61P

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 practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/133290 A2 (GENENTECH INC [US]; MARTIN FLAVIUS [US]) 22 November 2007 (2007-11-22) page 2, line 7 - page 5, line 32 page 6, line 27 - page 11, line 27 page 12, line 5 - line 21 page 13, line 12 - line 38 page 23, line 26 - line 37 page 27, line 6 - line 10 page 43, line 20 - page 45, line 2 page 52, line 33 - page 54, line 19 page 61, line 3 - page 62, line 2 examples 1-8 ----- -/--	1-25

[x] Further documents are listed in the continuation of Box C.

[x] 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 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	Date of mailing of the international search report
19 April 2023	23/06/2023

Name and mailing address of the ISA/	Authorized officer
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Form PCT/ISA/210 (second sheet) (April 2005)

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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 2005/094879 A2 (AMGEN INC [US]; ABGENIX INC [US] ET AL.) 13 October 2005 (2005-10-13) the whole document; in particular examples 1-7; paragraphs 174, 175, 179-184, 187-196	1-25
A	US 2013/209511 A1 (MEBATSION TESHOME [US] ET AL) 15 August 2013 (2013-08-15) paragraphs [0018], [0060], [0078]; figure 16; examples 2, 6; sequence 12	1-25
A	WO 2020/074874 A1 (GENOME RES LTD [GB]) 16 April 2020 (2020-04-16) cited in the application the whole document, in particular examples 1-3	1-25
A	WO 2018/189520 A1 (GENOME RES LTD [GB]) 18 October 2018 (2018-10-18) cited in the application the whole document	1-25
X,P	WO 2022/029447 A1 (PETMEDIX LTD [GB]) 10 February 2022 (2022-02-10) the whole document, in particular examples 1-8	1-25

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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 2007133290 A2	22-11-2007	AR 057253 A1	21-11-2007
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		BR PI0621065 A2	29-11-2011
		CA 2633602 A1	22-11-2007
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		EP 1973949 A2	01-10-2008
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		WO 2007133290 A2	22-11-2007
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WO 2005094879 A2	13-10-2005	AU 2005229009 A1	13-10-2005
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		EP 1740208 A2	10-01-2007
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		CA 2864119 A1	22-08-2013
		CN 104203271 A	10-12-2014
		EA 201400912 A1	30-01-2015
		EP 2814506 A1	24-12-2014
		EP 3466443 A1	10-04-2019
		ES 2723273 T3	23-08-2019
		ES 2866108 T3	19-10-2021
		HK 1200327 A1	07-08-2015
		JP 6260972 B2	17-01-2018
		JP 2015511948 A	23-04-2015
		MX 360415 B	31-10-2018
		NZ 628270 A	30-09-2016
		NZ 722700 A	22-12-2017
		US 2013209511 A1	15-08-2013
		US 2017137843 A1	18-05-2017
		WO 2013123242 A1	22-08-2013
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		CN 113544147 A	22-10-2021
		EP 3864038 A1	18-08-2021
		GB 2578867 A	03-06-2020
		JP 2022512638 A	07-02-2022
		US 2021388117 A1	16-12-2021
		WO 2020074874 A1	16-04-2020
WO 2018189520 A1	18-10-2018	BR 112019021252 A2	12-05-2020
		CA 3059513 A1	18-10-2018
		CN 111031789 A	17-04-2020
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		GB 2561352 A	17-10-2018
		JP 2020512840 A	30-04-2020
		US 2020056202 A1	20-02-2020

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Information on patent family members

International application No
PCT/GB2023/050281

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		WO 2018189520 A1	18-10-2018
WO 2022029447 A1	10-02-2022	AU 2021319941 A1	16-02-2023
		CA 3186391 A1	10-02-2022
		CN 116249710 A	09-06-2023
		EP 4192867 A1	14-06-2023
		WO 2022029447 A1	10-02-2022

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX097, PMX063, PMX086, PMX087, PMX094, PMX095, PMX096, PMX098, PMX099, PMX100, PMX101, PMX102, PMX103, PMX104, PMX105, PMX107, PMX108, PMX109, PMX110 or PMX111, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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2. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX154, PMX054, PMX084, PMX293 or PMX294, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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3. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX051 or PMX088, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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4. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX025, PMX026, PMX027, PMX089, PMX090, PMX091, PMX092 or PMX093, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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5. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX028, PMX029, PMX032, PMX033, PMX034, PMX035, PMX036, PMX038, PMX042, PMX045, PMX064, PMX082 or PMX083, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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6. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX030 or PMX031, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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7. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX035, PMX037, PMX040, PMX048, PMX049 or PMX065, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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8. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX039, PMX041, PMX043, PMX044, PMX046, PMX050, PMX055, PMX056, PMX057, PMX058, PMX059, PMX062 or PMX085, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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9. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX047 or PMX053, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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10. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is the antibody designated PMX052, which is characterized by at least all of its six CDR sequences as disclosed in table 2; and related subject-matter.

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11. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX060 or PMX061, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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12. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is the following antibody designated PMX106, which is characterized by at least all of its six CDR sequences as disclosed in table 2; and related subject-matter.

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13. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX054, PMX084, PMX293 or PMX294, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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14. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX155 or PMX156, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

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15. claims: 1-25(partially)

An antibody or fragment thereof that specifically binds to companion animal OX40L, wherein the antibody is selected from one of the following antibodies designated PMX291 or PMX292, which are characterized by at least all of their six CDR sequences as disclosed in table 2; and related subject-matter.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 1-25(partially)

Present claims 1-8 (as well as claims 9-25 dependent thereon) relate to an extremely large number of possible antibodies. Support and disclosure in the sense of Article 6 and 5 PCT is to be found however for only a very small proportion of the antibodies claimed, see the antibodies defined by at least all of their six specific CDR sequences in the right order and according to a clear definition disclosed and supported by the present application in table 2 on pages 90-188. In this regard it is noted that the characterization of an antibody by at least all of its six CDR sequences is essential to its definition for the reason that antibodies functional properties depend (at least) on these sequences. The non-compliance with the substantive provisions is to such an extent, that the search was performed taking into consideration the non-compliance in determining the extent of the search of these claims (PCT Guidelines 9.19 and 9.23).The search of claims 1-8 (as well as claims 9-25 dependent thereon) was restricted to those claimed antibodies which appear to be supported (see sequences of CDRs, VH/VL in table 2 on pages 90-188) taking also into consideration the lack of unity of invention.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-IV, 7.2), should the problems which led to the Article 17(2) PCT declaration be overcome.