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1 October 2009

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Previous Correction:

see Notice of 2 July 2009

(54) Title: IL-18 RECEPTOR ANTIGEN BINDING PROTEINS

(57) Abstract: Provided herein are IL-18 receptor antigen binding proteins and polynucleotides encoding the same. Expression vectors and host cells comprising the same for production of the antigen binding proteins are also provided. In addition, provided are compositions and methods for diagnosing and treating diseases mediated by IL-18 receptor.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/71047

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - C07K 16/28 (2009.01)

USPC - 530/388.22

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 16/28 (2009.01)

USPC- 530/388.22

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)

PubWEST(PGPB,USPT,USOC,EPAB,JPAB); Google Patents; Google Scholar

IL-18, receptor, antagonist, autoimmune, monoclonal, antibody, epitope, mapping, inhibitor, 250-253, 267-271, binding residues, hepatitis, pancreatitis,

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0023336 A1 (HEAVNER et al.) 05 February 2004 (05.02.2004) (para [0011], [0027], [0033], [0034], [0050]-[0054], [0057], [0058], [0064], [0065], [0106]-[0108], [0109], [0117], [0118], [0174], [0175], [313], [0314])	29-48
A	US 2004/0018198 A1 (GUDAS et al.) 29 January 2004 (29.01.2004)	1-8, and 10-28
A	WO 01/27279 A1 (EDWARDS et al.) 19 April 2001 (19.04.2001)	1-8, and 10-28
A	US 2007/0025992 A1 (TAKAYAMA et al.) 1 February 2007 (01.02.2007)	9
A	US 2003/0059937 A1 (RUBEN et al.) 27 March 2003 (27.03.2003)	9

☐ 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

12 May 2009 (12.05.2009)

Date of mailing of the international search report

21 MAY 2009

Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/71047

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 1-48, directed to antigen binding proteins, nucleic and amino acid sequences related to antigen binding proteins, restricted to an antibody comprising AMh1 as in SEQ ID NO: 1, and AMI1, as in SEQ ID NO: 18. The group comprises subgroups related to additional sequences, as listed in Table 1 of the application, wherein each additional unique antibody sequence, as listed in Table 1 constitutes a unique invention for which the applicant may pay an additional fee for searching, with the exception of sequences related to AMh14, as in SEQ ID NO: 14, for which searches will be conducted without an additional search fee (see below).

- 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.:
Claims 1-48, restricted to an antibody comprising AMh1 as in SEQ ID NO: 1, and AMI1, as in SEQ ID NO: 18.

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.

PCT/US 08/71047

Continuation of Box III: Lack of Unity of Invention

The inventions listed as subgroups of Group I 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 an isolated antigen binding protein that comprises AMh1 as in SEQ ID NO: 1 and AMI1 as in SEQ ID NO: 18. The special technical feature of the subgroups is an isolated antigen binding protein comprising related, but unique sequences, as listed in Table 1.

The only common technical element shared by the above groups is that they are related to antigen binding proteins. While the nucleic acids of the claims of the subgroups of Group I each constitute antibodies or portions of antibodies, these sequences, in particular, AMh14, as in SEQ ID NO: 14, are not unique over the prior art of US 6,699,473 B2 to Raisch et al. (see SEQ ID NO:1). Therefore, the inventions of Group I and Group II lack unity of invention under PCT Rule 13 because they do not share a same or corresponding special technical feature.