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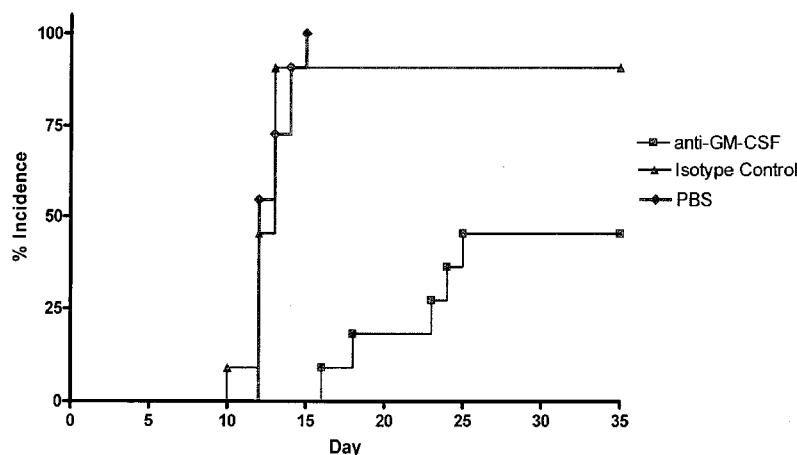
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Declarations under Rule 4.17:

[Continued on next page]

(54) Title: HUMAN GM-CSF ANTIGEN BINDING PROTEINS

Figure 1a



(57) Abstract: Antigen binding proteins that bind to human GM-CSF protein are provided. Nucleic acids encoding the antigen binding protein, vectors, and cells encoding the same are also provided. The antigen binding proteins can inhibit binding of GM-CSF to GM-CSFR, inhibit GM-CSF-induced proliferation and signaling of myeloid lineage cell lines and inhibit GM-CSF-induced activation of human monocytes.



- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))* — *with sequence listing part of description (Rule 5.2(a))*

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- *with international search report (Art. 21(3))*
- *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))*

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/010888

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07K16/24 C12N15/13 A61K39/395

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, CHEM ABS Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/092939 A (MORPHOTEK INC [US]; SASS PHILIP M [US]; NICOLAIDES NICHOLAS E [US]; GR) 16 August 2007 (2007-08-16) paragraphs [0139], [0194], [0202]	1-37
X	WO 2006/111353 A (MICROMET AG [DE]; RAUM TOBIAS [DE]; HEPP NEE HENCKEL JULIA [CH]; KRINN) 26 October 2006 (2006-10-26) example 2.2.6.2	1-37
X	EP 0 499 161 A (SQUIBB BRISTOL MYERS CO [US]) 19 August 1992 (1992-08-19) page 9, line 7 - page 10, line 41	1-37
X	US 5 475 087 A (SEELIG GAIL F [US] ET AL) 12 December 1995 (1995-12-12) column 6, line 54 - line 65	1-37
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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

15 January 2009

Date of mailing of the international search report

08/07/2009

Name and mailing address of the ISA/

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Weigl, Martina

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/010888

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 2006/122797 A (MORPHOSYS AG [DE]; STEIDL STEFAN [DE]; THOMASSEN-WOLF ELISABETH [DE]) 23 November 2006 (2006-11-23) claims 1,34-36 -----	1-37
X	EP 1 593 690 A (MICROMET AG [DE]) 9 November 2005 (2005-11-09) paragraph [0101]; claims 19-21 -----	1-37
X	WO 2007/049472 A (EVEC INC [JP]; NAKAJIMA KANTOU [JP]) 3 May 2007 (2007-05-03) the whole document	1-37
P,X	-& EP 1 947 178 A (EVEC INC [JP]) 23 July 2008 (2008-07-23) claim 1 -----	1-37
P,X	WO 2008/064321 A (KALOBIOUS PHARMACEUTICALS INC [US]; BEBBINGTON CHRISTOPHER R [US]; YARR) 29 May 2008 (2008-05-29) the whole document -----	1-37

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/010888

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.:
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.:

1-37 (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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

Invention 1: Claims 1-37 (partially)

Claims relating to an antigen binding protein that binds GM-CSF comprising a CDRH1 represented by SEQ ID No 10; nucleic acids encoding such proteins; compositions comprising these proteins; therapeutic uses of these proteins

Invention 2-67: Claims 1-37 (partially)

Claims relating to an antigen binding protein that binds GM-CSF comprising a CDRH1 selected from SEQ ID Nos 22, 70, 94 and 142 or a CDRH2 selected from SEQ ID Nos 11, 23, 28, 35, 47, 59, 71, 95, 106, 119 and 143 or a CDRH3 selected from SEQ ID Nos 12, 24, 36, 48, 60, 72, 83, 96, 108, 120, 132 and 144 or a CDRL1 selected from SEQ ID Nos 4, 16, 30, 40, 52, 64, 88, 100, 107, 112, 118, 124, 125 and 136 or a CDRL2 selected from SEQ ID Nos 5, 17, 29, 34, 41, 65, 77, 101, 113, 130, 131 and 137 or a CDRL3 selected from SEQ ID Nos 6, 18, 42, 46, 66, 78, 84, 89, 90, 102, 114, 126 and 138; nucleic acids encoding such proteins; compositions comprising such proteins; therapeutic use of these proteins

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/010888

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2007092939	A	16-08-2007	AU 2007213716 A1 CA 2641169 A1 EP 1981909 A2 KR 20080099314 A US 2008292641 A1	16-08-2007 16-08-2007 22-10-2008 12-11-2008 27-11-2008
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WO 2008064321	A	29-05-2008	US 2008206241 A1	28-08-2008

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2008/010888

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

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
- a. type of material
- ☒ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☒ on paper
- ☒ in electronic form
- c. time of filing/furnishing
- ☒ contained in the international application as filed
- ☒ filed together with the international application in electronic form
- ☐ furnished subsequently to this Authority for the purpose of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments: