(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 February 2002 (14.02.2002)

PCT

(10) International Publication Number
WO 02/012500 A3

(51) International Patent Classification[7]: C12N 15/13, C07K 16/24, C12N 15/79, 5/10, A61K 39/395, C07K 16/42, A61P 37/00, G01N 33/50, 33/577

(21) International Application Number: PCT/US01/24720

(22) International Filing Date: 7 August 2001 (07.08.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/223,358	7 August 2000 (07.08.2000)	US
60/236,827	29 September 2000 (29.09.2000)	US
09/920,262	1 August 2001 (01.08.2001)	US

(71) Applicant: CENTOCOR, INC. [US/US]; 200 Great Valley Parkway, Malvern, PA 19355 (US).

(72) Inventors: GILES-KOMAR, Jill; 31 Blakely Road, Downingtown, PA 19355 (US). KNIGHT, David, M.; 2430 Whitehorse Road, Berwyn, PA 19312 (US). PERITT, David; 407 Conshohocken State Road, Bala Cynwyd, PA 19004 (US). SCALLON, Bernard; 139 Hemlock Drive, Collegeville, PA 19426 (US). SHEALY, David; 1351 Penns Ridge Place, Downingtown, PA 19335 (US).

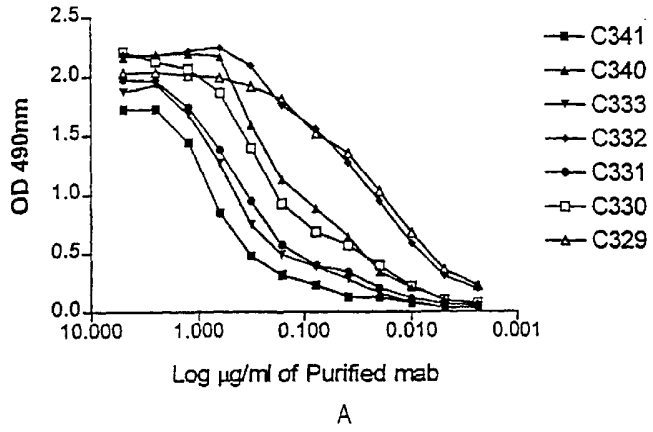
(74) Agents: JOHNSON, Philip, S. et al.; One Johnson & Johnson Plaza, New Brunswick, NJ 08933 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

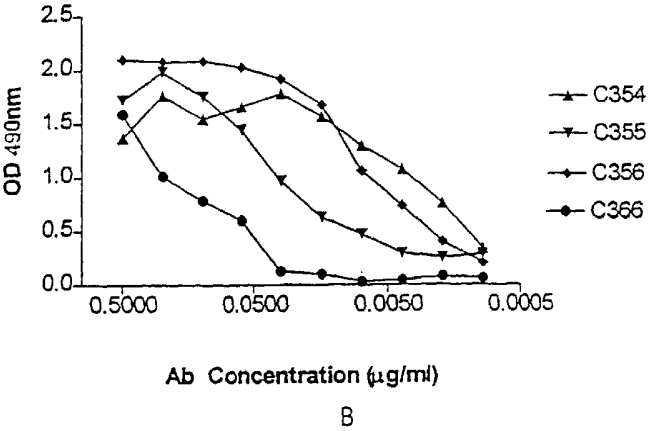
[Continued on next page]

(54) Title: ANTI-IL-12 ANTIBODIES, COMPOSITIONS, METHODS AND USES

(57) Abstract: The present invention relates to at least one novel anti-IL-12 antibodies, including isolated nucleic acids that encode at least one anti-IL-12 antibody, IL-12, vectors, host cells, transgenic animals or plants, and methods of making and using thereof, including therapeutic compositions, methods and devices.



A



B

WO 02/012500 A3

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

— *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:
3 January 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/24720

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N15/13 C07K16/24 C12N15/79 C12N5/10 A61K39/395
C07K16/42 A61P37/00 G01N33/50 G01N33/577

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 7 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)
WPI Data, EPO-Internal, PAJ, BIOSIS, MEDLINE, SEQUENCE SEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 15327 A (US HEALTH) 1 May 1997 (1997-05-01) page 5, line 5-15 examples 5,6	1-101
A	WO 96 33735 A (CELL GENESYS INC) 31 October 1996 (1996-10-31) page 1, line 31 -page 3, line 30 page 15, line 6	1-101
X	WO 99 37682 A (HOFFMANN LA ROCHE) 29 July 1999 (1999-07-29) page 2, line 20 -page 3, line 16 page 14, line 15-24	1-101

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in 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	Date of mailing of the international search report
23 July 2002	30/07/2002

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	COVONE-VAN HEES, M

3

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	YAWALKAR NIKHIL ET AL: "Expression of interleukin-12 is increased in psoriatic skin." JOURNAL OF INVESTIGATIVE DERMATOLOGY, vol. 111, no. 6, December 1998 (1998-12), pages 1053-1057, XP008005771 ISSN: 0022-202X abstract	16,36, 56,76,96
P,X	WO 00 56772 A (BASF AG ;DERBYSHIRE ELAINE J (GB); CARMEN SARA (GB); SMITH STEPHEN) 28 September 2000 (2000-09-28) page 2, line 26 -page 5, line 14 example 1	1-101

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/24720

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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. [X] Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 12-17,32-37,52-57,72-77,92-97 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.

2. [X] Claims Nos.: 61,64,69,71,72,78,79,81,84,89,91,92,98,99 (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 II Observations where unity of invention is lacking (Continuation of item 2 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 all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

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.:

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest.

[ ] No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 61,64,69,71,72,78,79,81,84,89,91,92,98,99 (partially)

Present claims 61 and 81 (and claims 64,69,71,72,78,79,84,89,91,92,98,99 disclosing related products and methods) relate to products defined by reference to a desirable characteristic or property, namely mammalian anti-IL-12 antibody that binds to the same region of IL-12 as an antibody comprising at least one of the CDR disclosed in claim 41 or to at least 1-3, to then entire amino acid of seq.ID 9. The claims cover all products having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product and method by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the products disclosed in claim 1, 21 and 41 and related nucleic acid, host cell, compositions, anti-idiotype antibody, medical device and methods. For claim 21 (and claims disclosing related products and methods) is assumed that the CDR seq.ID are mistaken and that the correct sequences are the same to the one disclosed in claim 41.

The applicant's attention is drawn to the fact that claims, or parts of 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.

INTERNATIONAL SEARCH REPORT

nformation on patent family members

International Application No
PCT/US 01/24720

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9715327 A	01-05-1997	US 5853697 A	29-12-1998
		AU 710282 B2	16-09-1999
		AU 5378696 A	15-05-1997
		CA 2235866 A1	01-05-1997
		EP 0862461 A1	09-09-1998
		JP 2000502991 T	14-03-2000
		WO 9715327 A1	01-05-1997
WO 9633735 A	31-10-1996	AU 5632296 A	18-11-1996
		CA 2219361 A1	31-10-1996
		EP 0822830 A1	11-02-1998
		JP 11505523 T	21-05-1999
		WO 9633735 A1	31-10-1996
		US 6075181 A	13-06-2000
		US 6150584 A	21-11-2000
WO 9937682 A	29-07-1999	AU 2517799 A	09-08-1999
		BR 9907743 A	17-10-2000
		CA 2318052 A1	29-07-1999
		CN 1288468 T	21-03-2001
		WO 9937682 A2	29-07-1999
		EP 1049717 A2	08-11-2000
		JP 2002501085 T	15-01-2002
		TR 200002145 T2	21-11-2000
		US 6225117 B1	01-05-2001
		ZA 9900452 A	23-07-1999
WO 0056772 A	28-09-2000	AU 3921600 A	09-10-2000
		BR 0009323 A	08-01-2002
		CN 1351614 T	29-05-2002
		EP 1175446 A1	30-01-2002
		NO 20014605 A	26-11-2001
		NZ 513945 A	28-09-2001
		WO 0056772 A1	28-09-2000