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(71) Applicant (*for all designated States except US*): **PHARMACIA & UPJOHN COMPANY** [US/US]; 301 Henrietta Street, Kalamazoo, MI 49001 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **HOLMGREN, Erik** [SE/SE]; Lojovagen 3, S-181 41 Lidingo (SE). **KIHLEN, Mats** [SE/SE]; Lastmakargatan 8B, S-754 34 Uppsala (SE). **WOOD, Tim** [GB/SE]; Skogsstigen 11, S-131 42 Nacka (SE). **EKBLOM, Jonas** [SE/SE]; Karlsrogatan 93B, S-752 39 Uppsala (SE).

(74) Agents: **DELUCA, Mark** et al.; Woodcock Washburn Kurtz Mackiewicz & Norris LLP, 46th floor, One Liberty Place, Philadelphia, PA 19103 (US).

Declarations under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only
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Published:

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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.

(54) Title: NOVEL MATRIX METALLOPROTEINASES

(57) Abstract: The present invention provides genes encoding novel matrix metalloproteinases termed MMP; constructs and recombinant host cells incorporating the genes; the MMP polypeptides encoded by the genes; antibodies to the MMP polypeptides; and methods of making and using all of the foregoing.



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INTERNATIONAL SEARCH REPORT

Int Application No
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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 C12N9/64 C12N15/52 C12N15/11 C12N5/10 C12N15/86 C07K16/40 A61K38/48 G01N33/50		
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 C12N		
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) SEQUENCE SEARCH, WPI Data, EPO-Internal, PAJ, BIOSIS, EMBL		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	YANG & KURKINEN: "Cloning and characterization of a novel matrix metalloproteinase (MMP), CMMP, from chicken embryo fibroblasts" J. BIOL. CHEMISTRY, vol. 273, no. 28, 10 July 1998 (1998-07-10), pages 17893-17900, XP002191238 the whole document	1,3,5-7, 9,13-15, 22,23, 25-28, 30,33,35
X	WO 00 18900 A (M. SEIKI) 6 April 2000 (2000-04-06) the whole document	1,3,5-7, 9,13-15, 22, 25-28, 30,32, 33,35, 40,48
-/--		
☒ Further documents are listed in the continuation of box C. ☒ 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 27 June 2002		Date of mailing of the international search report 16. 07. 02
Name and mailing address of the ISA 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		Authorized officer Kalsner, I

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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.
P,X	WO 01 16335 A (PIERRE FABRE MEDICAMENT) 8 March 2001 (2001-03-08) the whole document	1-22, 25-38
A	YOSHIYAMA ET AL.: "Selective distribution of matrix metalloproteinase-3 (MMP-3) in Alzheimer's disease brain" ACTA NEUROPATHOL., vol. 99, February 2000 (2000-02), pages 91-95, XP001055983 the whole document	
X	DATABASE EMBL 'Online! 7 March 2000 (2000-03-07) STRAUSBERG, R.: "Matrix metallopteinase-14" Database accession no. AW519125 XP002203713 abstract	1,3,5-7, 22,25
X	SHAPIRO ET AL.: "Cloning and characterization of a unique elastolytic metalloproteinase produced by human alveolarmacrophages" J. BIOLOGICAL CHEMISTRY, vol. 28, no. 32, 15 November 1993 (1993-11-15), pages 23824-23829, XP000564634 the whole document	1,3,5-7, 9,13-15, 22,25, 28,30, 32,33, 35,36, 38,39
X	-& DATABASE EMBL 'Online! 21 December 1993 (1993-12-21) SHAPIRO ET AL.: "Metalloproteinase (HME) mRNA, complete cds." Database accession no. L23808 XP002203714 abstract	

INTERNATIONAL SEARCH REPORT

onal application No.
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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. ☒ Claims Nos.: 56-64
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.: 44, 47, 52
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:

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 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

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

1. Claims: 1-77, partially

Subject-matter of claims 1-77 insofar as it relates to SEQ
ID NOs: 1 and 4

2. Claims: 1-77, partially

Subject-matter of claims 1-77 insofar as it relates to SEQ
ID NOs: 2 and 5

3. Claims: 1-77, partially

Subject-matter of claims 1-77 insofar as it relates to SEQ
ID NOs: 3 and 6

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Although claims 56-60 are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box I.1

Claims Nos.: 56-64

Rule 39.1(iv) PCT - Diagnostic method practised on the human or animal body

Continuation of Box I.2

Claims Nos.: 44, 47, 52

Present claims 44, 47 and 52 relate to a compound defined by reference to a desirable characteristic or property, namely its capability of binding MMP, binding a nucleic acid encoding MMP and modulating MMP, respectively.

The claims cover all compounds having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT for only a very limited number of such compounds. 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 compound 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 compounds comprising an antibody directed to the polypeptide of SEQ ID NO: 4 or an antisense oligonucleotide of SEQ ID NO: 1.

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
 Information on patent family members

International Application No
PCT/US 01/16563

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 0018900	A	06-04-2000	AU	5999099 A		17-04-2000
			EP	1136549 A1		26-09-2001
			WO	0018900 A1		06-04-2000
WO 0116335	A	08-03-2001	FR	2797890 A1		02-03-2001
			AU	7295500 A		26-03-2001
			WO	0116335 A2		08-03-2001