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- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations 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, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, 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)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

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(72) Inventors; and

(75) Inventors/Applicants (*for US only*): SU, Eric, Wen [US/US]; 13447 Dunes Drive, Carmel, IN 46032 (US). WANG, He [US/US]; 3061 Hazel Foster Drive, Carmel, IN 46033 (US). ZHI, Yu [CN/US]; 712 Lockefield Court, Apartment 1, Indianapolis, IN 46202 (US).

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(88) Date of publication of the international search report:
16 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.

(54) Title: SECRETED PROTEINS AND METHODS OF USING SAME

(57) Abstract: The present invention provides nucleic acid sequences encoding novel human proteins. These novel nucleic acids are useful for constructing the claimed DNA vectors and host cells of the invention and for preparing the claimed nucleic acids, recombinant proteins and antibodies that are useful in the claimed methods and medical uses.



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/22598

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 C07K14/47 C07K16/18 C12N9/00 C12N15/11 C12N15/12 C12N15/62 G01N33/53 A61K31/7088 A61K38/17 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) IPC 7 C07K C12N G01N A61K 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					
C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category °	Citation of document, with indication, where appropriate, of the relevant passages				Relevant to claim No.
X	DATABASE EMBL [Online] 7 January 1998 (1998-01-07) LAMERDIN, J.E. ET AL.: "Homo sapiens chromosome 19, cosmid R26624 (LLNLR-226B12), complete sequence." Database accession no. AC003967 XP002199809				1,3-19, 22,24,25
Y	see nt 3099-3498				20,21,23
Y	--- WO 99 56763 A (UNIV CALIFORNIA) 11 November 1999 (1999-11-11) the whole document --- ---				20,21,23
	-/--				
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> 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		
24 May 2002			28. 08. 2002		
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 Sma1t, R		

INTERNATIONAL SEARCH REPORT

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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.
A	<p>KLEIN R D ET AL: "SELECTION FOR GENES ENCODING SECRETED PROTEINS AND RECEPTORS" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE. WASHINGTON, US, vol. 93, no. 14, 9 July 1996 (1996-07-09), pages 7108-7113, XP002061411 ISSN: 0027-8424 the whole document</p> <p>---</p>	
A	<p>YOKOYAMA-KOBAYASHI M ET AL: "A signal sequence detection system using secreted protease activity as an indicator" GENE, ELSEVIER BIOMEDICAL PRESS. AMSTERDAM, NL, vol. 163, no. 2, 3 October 1995 (1995-10-03), pages 193-196, XP004041983 ISSN: 0378-1119 the whole document</p> <p>---</p>	
A	<p>WO 97 07198 A (GENETICS INST) 27 February 1997 (1997-02-27) the whole document</p> <p>---</p>	
E	<p>WO 01 79454 A (MURDOCH PAUL R ;SMITHKLINE BEECHAM PLC (GB); SMITHKLINE BEECHAM CO) 25 October 2001 (2001-10-25) see protein #23</p> <p>-----</p>	1,3-19, 22,24,25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/22598

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.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 19-21 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. 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:

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.:

21, 23-25, and claims 1, 3-20, 22 partially

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

Present claims 18-24 relate to compounds defined by reference to a desirable characteristic or property, namely having (ant)agonistic and/or modulating activity towards the protein according to seq.D.2.

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 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 antibodies and ribozymes directed at the protein according to seq.ID.2, resp. the nucleic acid sequence according to seq.ID.1, and the general concept of modulating related to said sequences.

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. Claims: 21,23-25, and claims 1,3-20,22 partially

LP242 polypeptide (seq.ID.2), nucleic acid encoding it (seq.ID.1), homologs thereof, vector, host cell, process for producing, chimeric proteins, antibodies, and therapeutic compositions of any of the above or a ribozyme.

2. Claims: 1,3-20,22, all partially

LP259 polypeptide (seq.ID.6), nucleic acid encoding it (seq.ID.5), homologs thereof, vector, host cell, process for producing, chimeric proteins, antibodies, and therapeutic compositions of any of the above or a ribozyme.

3. Claims: 2 and claims 5-8,10-20 partially

LP257 polypeptide (seq.ID.4), nucleic acid encoding it (seq.ID.3), homologs thereof, vector, host cell, process for producing, chimeric proteins, antibodies, and therapeutic compositions of any of the above or a ribozyme.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/22598

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