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Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

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: ISOLATED MCP-1 AND METHODS OF USE

(57) Abstract: A monocyte chemoattractant protein (MCP-1)-inducible protein, MCP-1, its polynucleotide and amino acid sequences from mouse and human, and methods for its use are disclosed.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/48712

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **A61K 38/55**(2006.01);**48/00**(2006.01);**C07H 21/04**(2006.01);**C12P 21/06**(2006.01)

USPC: 514/12,11;435/69.1,320.1,325;530/350;536/23.5

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)

U.S. : 514/12,11;435/69.1,320.1,325;530/350;536/23.5

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/46413 A2 (HILLMAN et al.) 13 JUNE 2002 (13.06.2002), especially claims 63 and 75; pages 4 (l. 18-31), 36 (l. 27-31), 37 (l. 1-28), 38 (l. 34-35), 39 (line 1) and 69 (l. 15-21).	1-4, 8-10
X	US 2002/0182586 A1 (MORRIS et al.) 05 DECEMBER 2002 (05.12.2002), especially claim 5 and page 3, paragraph 25).	1-4,-8-10
X	WO 2004/009834 A2 (TANG et al.) 29 JANUARY 2004 (29.01.2004), especially Table 8.	1,2
X	US 2002/0137081 A1 (BANDMAN) 26 SEPTEMBER 2002 (26.09.2002), especially abstract.	1,2
X	US 2003/0194721 A1 (MIKITA et al.) 16 OCTOBER 2003 (26.10.2003), especially claim 1; page 2, paragraphs 9 and 12.	1,2
X	Genbank # AAX14017 (KOLATTUBUDY et al.)m page 1.	1,2



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search
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INTERNATIONAL SEARCH REPORT

International application No.
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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.
X	Genbank # BC005001 (STRAUSBERG), pages 1-3.	1,2

INTERNATIONAL SEARCH REPORT

International application No.

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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:
Please See Continuation 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 additional fees, this Authority did not invite payment of any 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.: 1-4 and 8-10

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.
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BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

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.

Groups I-II, claims 1-4, 8-10, are drawn to an isolated nucleic acid sequence of inducible cellular transcription factor MCP-1 having SEQ. ID. NO. 1 or SEQ ID NO 3, respectively.

Groups III-IV, claims 5-7 and 11-12, are drawn to a polypeptide having SEQ ID NO. 2 or 4, respectively.

Group V, claims 13 and 14 are drawn to a method for preventing ischemic heart disease comprising siRNA specific for MCPIP.

Group VI, claims 13 and 15, are drawn to a method for preventing ischemic heart disease using a cell permeable peptide functionally linked to an amino acid sequence that blocks nuclear localization of MCPIP.

Groups VII-VIII, claims 16 and 17, are drawn to a method for promoting angiogenesis using SEQ ID NO 1 or 3 encoding SEQ ID NO 2 or 4, respectively.

Group IX, claims 18 and 19, are drawn to a pharmaceutical composition comprising a MCPIP inhibitor.

Group X, claims 20 and 21 are drawn to a inhibitor of MCPIP nuclear localization.

The International Searching Authority considers that the international applications does not comply with the requirement of unity of invention (PCT Rule 13.1, 13.2 and 13.3) for the reason indicated below:

The claims are not linked by common technical features because they are drawn to multiple gene and amino acid sequences which do not share a significant structural element, and do not impart a common property or effect. Thus the group do not have a "special" technical feature and lack unity of invention.

Groups I-II, claims 1-4, 8-10 require a nucleic acid of SEQ ID NO: 1 or SEQ ID NO: 3 encoding the polypeptide, the polypeptide MCP-1 of SEQ ID NO: 2 or SEQ ID NO: 4 and host cell containing said polypeptide, not required by the other groups.

Groups III-IV, claims 5-7 and 11-12 require a polypeptide MCP-1 having SEQ ID NO: 2 or SEQ ID NO: 4 sequences not required by the other groups.

Group V, claims 13 and 14 require a method administering siRNA not required by the other groups.

Group VI, claims 13 and 15 require a method of administering a fusion protein not required by the other groups.

Groups VII-VIII, claims 16 and 17 require a method of administering a gene comprising SEQ ID NO: 1 or SEQ ID NO: 3 not required by the other groups.

Group IX, claims 18 and 19 require a siRNA not required by the other groups.

Group X, claims 20 and 21 require a fusion protein not required by the other groups.

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Continuation of B. FIELDS SEARCHED Item 3:

USPG-PUB, USPAT, MEDLINE.

Search terms: "inducible transcription factor", "monocyte chemoattractant protein".