



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C07K 14/52, A61K 38/19, C07K 5/08, C07C 237/22, 229/30, C07K 7/64, A61K 45/06		A3	(11) International Publication Number: WO 99/12968
			(43) International Publication Date: 18 March 1999 (18.03.99)
(21) International Application Number: PCT/US98/19052 (22) International Filing Date: 11 September 1998 (11.09.98) (30) Priority Data: 08/927,939 11 September 1997 (11.09.97) US (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 08/927,939 (CIP) Filed on 11 September 1997 (11.09.97) (71) Applicant (for all designated States except US): NEORX CORPORATION [US/US]; 410 West Harrison, Seattle, WA 98119-4007 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): GRAINGER, David, J. [GB/GB]; 9 St. John's Street, Duxford, Cambridge CB2 4RA (GB). TATALICK, Lauren, Marie [US/US]; 21235 N.E. 50th, Redmond, WA 98053 (US). KANALY, Suzanne, T. [US/US]; 3726 S.W. Webster, Seattle, WA 98126 (US). (74) Agent: VIKSNINS, Ann, S.; Schwegman, Lundberg, Woessner & Kluth, P.O. Box 2938, Minneapolis, MN 55402 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 29 July 1999 (29.07.99)	
(54) Title: CHEMOKINE PEPTIDES, VARIANTS, DERIVATIVES AND ANALOGS. THEIR USE IN METHODS TO INHIBIT OR AUGMENT AN INFLAMMATORY RESPONSE (57) Abstract Isolated and purified chemokine peptides, variants, and derivatives thereof, as well as chemokine peptide analogs, are provided.			

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EE	Estonia						

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 98/19052

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C07K14/52 A61K38/19 C07K5/08 C07C237/22 C07C229/30
C07K7/64 A61K45/06

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 6 C07K C07C 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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 079 228 A (COHEN ALLEN B ET AL) 7 January 1992 see the whole document ---	1,3-10, 17,18, 20-22, 24-28, 31-35, 40-46, 48-51,55
X	WO 94 20512 A (GLYCAN PHARM INC) 15 September 1994 See especially example 9, figure 4 and claims --- -/--	1,3-10, 17,18, 20-22, 24-28, 31-35, 40-46, 48-51,55

☒ 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

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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.

Z document member of the same patent family

Date of the actual completion of the international search

3 March 1999

Date of mailing of the international search report

11. 06. 1999

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/19052

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 86 04334 A (MERCK PATENT GMBH) 31 July 1986 see claims 1-16; tables 1,4,7 ---	1,3,4,6, 7,39,55
X	WO 92 04372 A (SCRIPPS RESEARCH INST) 19 March 1992 see claim 1 ---	1,8,10
X	THOMPSON E.A.: "Design and evaluation of small peptides mapping the exposed surface of IL-8" INTERNATIONAL JOURNAL OF PEPTIDE AND PROTEIN RESEARCH, vol. 47, 1996, COPENHAGEN DK, pages 214-218, XP002095213 see the whole document ---	1,8,10
X	CHEMICAL ABSTRACTS, vol. 82, no. 11, 17 March 1975 Columbus, Ohio, US; abstract no. 73463, NAGAMATSU E.A.: "Hydrolysis of lysine peptides by plasmin" XP002095217 see abstract & CHEM. PHARM. BULL., vol. 22, no. 11, 1974, pages 2680-2684, ---	1,3,6,7
X	CHEMICAL ABSTRACTS, vol. 82, no. 13, 31 March 1975 Columbus, Ohio, US; abstract no. 84651, NOGUCHI: "Isolation and identification of acidic oligopeptides..." XP002095218 see abstract & J. AGRIC. FOOD CHEM., vol. 23, no. 1, - 1975 pages 49-53, ---	1,3,6,7
X	DATABASE WPI Section Ch, Week 9519 Derwent Publications Ltd., London, GB; Class B04, AN 95-143871 XP002095220 -& JP 07 067 689 A (ZH KAGAKU & KESSEI RYOHO KENKYUSHO) , 14 March 1995 see page 1424 --- -/--	1,3,6,7

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/19052

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHEMICAL ABSTRACTS, vol. 103, no. 17, 28 October 1985 Columbus, Ohio, US; abstract no. 137328, PORSCHKE E.A: "The configuration of single stranded oligonucleotides..." XP002095219 see abstract & J.BIOL.STRUCT.DYN., vol. 2, no. 6, 1985, pages 1173-1184, ---	1,3,8,9
P,X	WO 98 12324 A (CENTER FOR BLOOD RESEARCH) 26 March 1998 The whole document; see especially SEQ ID NO. 10 ---	1,3-10, 17,18, 20-22, 24-28, 31-35, 40-46, 48-51,55
A	WELLS E.A.: "The molecular basis of the chemokine/chemokine receptor interaction-scope for design of chemokine antagonists." METHODS: A COMPANION TO METHODS OF ENZYMولوجY, vol. 10, 1996, pages 126-134, XP002095214 see the whole document ---	1,3-12, 17,18, 20-22, 24-28, 31-35, 40-51,55
A	GONG J H ET AL: "Antagonists of monocyte chemoattractant protein 1 identified by modification of functionally critical NH2-terminal residues." JOURNAL OF EXPERIMENTAL MEDICINE, (1995 FEB 1) 181 (2) 631-40. JOURNAL CODE: I2V. ISSN: 0022-1007., UNITED STATES, XP000605169 see the whole document ---	
A	WO 97 24325 A (TAKEDA CHEMICAL INDUSTRIES LTD ;KATO KANEYOSHI (JP); YAMAMOTO MITS) 10 July 1997 see the whole document ---	
A	SIMMONS E.A.: "Potent inhibition of HIV-1 infectivity in macrophages and lymphocytes by a novel CCR5 antagonist" SCIENCE, vol. 276, 11 April 1997, pages 276-279, XP002095215 see the whole document ---	

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/19052

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>GONG J H ET AL: "An antagonist of monocyte chemoattractant protein 1 (MCP -1) inhibits arthritis in the MRL-lpr mouse model."</p> <p>JOURNAL OF EXPERIMENTAL MEDICINE, (1997 JUL 7) 186 (1) 131-7. JOURNAL CODE: I2V. ISSN: 0022-1007., UNITED STATES, XP002095216</p> <p>see the whole document</p> <p style="text-align: center;">-----</p>	

INTERNATIONAL SEARCH REPORT

I. national application No.

PCT/US 98/ 19052

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:
Remark: Although claims 17-38, 40-45 and 48-50 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 FURHTER INFORMATION sheet
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 FURTHER INFORMATION 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.:

see FURTHER INFORMATION sheet, subject 1.

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: 1,3-5,11,12,47,55(complete);6-10,17,18,20-22,24-28,31-35,40-46,48-51(partially)

Chemokine peptide 3, a variant or derivative thereof and their medical use.

2. Claims: 2,13,19,29,30,56(complete),6-10,17,18,20-28,31-35,39-45,48-51(partially)

Chemokine peptide 2, a variant or derivative thereof and their medical use.

3. Claims: 14,36,52(complete),18,20-28,31-35,39,40,45,48-51(partially)

A compound of formula IV and its medical use

4. Claims: 15,37,53(complete),18,20-28,31-35,39,40,45,48-51(partially)

A compound of formula V and its medical use

5. Claims: 16,38,54(complete),18,20-28,31-35,39,40,45,48-51(partially)

A compound of formula VI and its medical use

6. Claim : 46(partially)

Peptides as defined in claim 46 as far as not encompassed by subject 1 and their medical use.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Further defect(s) under Article 17(2)(a):

Claims Nos.: 1,3,4,6-11,17,18,20-22,24-28,31-35,40-46,48-51,55(all partially)

The definition of "chemokine peptide 3" is vague and ambiguous. Several different definitions have been used to define this expression: e.g., see Table 1 on page 129, showing a peptide of 12 amino acids; page 31, line 25 to page 32, describing this expression as a peptide of 3-30 amino acids originating from the C-terminal part of any chemokine and also the definitions on the pages 3-5 relating to facultatively repeating sequences of amino acids of a general character lacking any significant structural constant entity. Therefore said expression "chemokine peptide 3" cannot be considered to be a clear and concise definition of patentable subject-matter (Art.6 PCT).

Furthermore the available experimental data actually only comprise a very small part of the compounds claimed, which part is moreover not evenly distributed over the whole claimed area. Therefore the claims can also not be considered to represent a permissible generalisation which is fairly based on experimental evidence, that is, they are also not adequately supported by the description (Art.6 PCT).

Therefore a meaningful and economically feasible search could not encompass the complete subject-matter of subject 1. Consequently the search has been limited to the actually synthesised compounds of the examples 1 and 2 and (partially) Figure 14 and the relevant SEQ ID's encompassed by subject 1 and their use and has been extended to compounds having the same activity (Art.17(2)(a)(ii) and (b) PCT, PCT Guidelines CIII,2.1 and CIII,3,7).

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/19052

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5079228 A	07-01-1992	NONE	
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