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A61K 39/21

A3

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PCT/US99/01726	28 January 1999 (28.01.99)	US

(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications

US	60/088,229 (CIP)
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(54) Title: PEPTIDE ANTIGENS FOR DETECTION OF HIV, HCV AND OTHER MICROBIAL INFECTIONS

Most likely M Substitution	569 H HQ	570 L	571 L	572 Q R	573 L LP	574 T TS	575 V	576 W
Most likely M Substitution	579 F R/R	580 Q	581 L	582 Q R	583 A	584 R	585 V L	586 L L/QI
Most likely M Substitution	587 A	588 V L	589 E	590 R T	591 Y L/F	592 L L/QM	593 Q	594 D N
Most likely M Substitution	597 L L/R	598 L N	599 G GN	600 I L	601 W	602 G	603 C	604 S S/N
Most likely M Substitution	607 L L/I	608 I IV	609 C	610 T Y	611 T	612 T S	613 V	614 P K
Most likely M Substitution	617 S TR/K	618 S ST	619 W					

(57) Abstract

Improved peptide antigens for diagnostic testing and therapy of disease are provided which differ from naturally occurring peptide sequences. These peptides immunologically cross-react with a wide variety of mutated forms of antigens and are particularly useful for testing and treatment of retroviral disease such as HIV infection, where rapid mutation of the disease vector is a concern. The peptides are from about 25 to about 100 amino acid residues long and, in addition to advantageous reactivity, also may possess one or more other advantageous characteristics such as improved water solubility or improved immunological reactivity as compared to naturally occurring strains such as ANT70 and MVP5180. Advantageous alterations include substitution of one or more hydrophobic residues with hydrophilic residues, removal of a basic amino acid positive charge to decrease non-specific binding and increase in peptide secondary structure by adding one or more amino acids to form or extend an alpha helix within the peptide. The claimed invention is exemplified by substitution of leucine by glutamine and by arginine in HIV envelope protein peptides. Peptides that have been modified according to principles of the claimed invention differ greatly from the naturally occurring forms and are not identified as belonging to any particular viral Group or strain.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 99/12446

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C07K14/16 C07K14/18 G01N33/68 A61K39/21

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 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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 591 914 A (BEHRINGWERKE AG) 13 April 1994 (1994-04-13) claim 17; example 8 ---	1-5,9-13
X	DE 44 05 810 A (BEHRINGWERKE AG) 24 August 1995 (1995-08-24) page 5, line 16 - line 45; claims; examples ---	1-5,9-13
X	WO 96 12809 A (PASTEUR INSTITUT ;CHARNEAU PIERRE (FR); CLAVEL FRANCOIS (FR); BORM) 2 May 1996 (1996-05-02) claims 18,19,22 ---	1
A	WO 96 27013 A (INST NAT SANTE RECH MED ;ASSIST PUBL HOPITAUX DE PARIS (FR); SIMON) 6 September 1996 (1996-09-06) page 6, line 2 - line 35; claims; table II --- -/-	1

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

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- *E* earlier document but published on or after the international filing date
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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

12 January 2000

Date of mailing of the international search report

26. 04. 2000

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

Internat'l Application No
PCT/US 99/12446

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SCHABLE ET AL: "Sensitivity of United States HIV antibody tests for detection of HIV-1 group 0 infections" SYNTHESIS, vol. 344, no. 344, 12 November 1994 (1994-11-12), page 1333/1334 XP002098165 ---	1
P,X	WO 99 04011 A (VANDEN HAESEVELDE MARLEEN ;INNOGENETICS NV (BE); SAMAN ERIC (BE);) 28 January 1999 (1999-01-28) seq Id: 71, 91-102, 137, 138 claims 1,2 ---	1,4,5,7, 12,13, 18-22
E	WO 99 45395 A (CHOWDURY MOHAMMED A ;UNIVERSAL HEALTHWATCH INC (US); BERNSTEIN DAV) 10 September 1999 (1999-09-10) seq ID: 1 ---	1-24, 32-38
P,X	WO 98 45318 A (SYVA CO) 15 October 1998 (1998-10-15) sep ID: 2-4 ---	1,18
A	WO 93 06488 A (GENELABS TECH INC) 1 April 1993 (1993-04-01) seq ID 7 claim 27 -----	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 99/ 12446

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:
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.:

1-53 (complete); 57-63 (partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 99/12446

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-53 (completely) 57-63 (partially)

PEPTIDE COMPOUNDS, METHODS AND KIT FOR THE DETECTION OF HIV ANTIBODIES

2. Claims: 54-56 (completely) 57-63 (partially)

PEPTIDE COMPOUNDS, METHODS AND KIT FOR THE DETECTION OF HCV ANTIBODIES

3. Claims: 57-63 (partially)

PEPTIDE COMPOUNDS, METHODS AND KIT FOR THE DETECTION OF ANTIBODIES DIRECTED AGAINST INFECTIOUS AGENTS OTHER THAN HIV AND HCV

INTERNATIONAL SEARCH REPORT

International Application No. PCT/ US 99/12446

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box 3.

Present claims 18-20, 25-28, 31, 34-37, 39-53 and 57-63 relate to an extremely large number of possible compounds/products/apparatus/methods. In fact, the claims contain so many options and possible permutations that a lack of clarity (and/or conciseness) within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims impossible. Consequently, the search has been carried out for those parts of the application which do appear to be clear (and/or concise), namely all peptides falling under the scope of the sequence ID's no. 1-20.

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

Internal Application No

PCT/US 99/12446

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