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(54) Title: TRANSPORT PEPTIDES DIRIVED FROM ERNS PROTEIN, CYTOTOXIC RNASE OF RIBOSOME-INACTIVATING PROTEIN OR A RSV G-PROTEIN AND ANALOGUES THEREOF

(57) Abstract: The invention relates to peptides derived from or similar to the E<sup>ms</sup> protein of pestiviruses for type -specific diagnosis of infection, for eliciting antibiotic activity and for transport of substances into a cell. For among others these purposes the invention provides an isolated, synthetic or recombinant protein module or functional equivalent thereof comprising an amino acid sequence that is at least 75 % identical to an amino acid sequence of a peptide located from at about amino acid position 194 to 220 in a pestiviral E<sup>ms</sup> protein.

**INTERNATIONAL SEARCH REPORT**

International Application No

PCT/NL 01/00484

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 C12N15/40 C07K14/18 C07K16/10 A61K39/12 G01N33/569

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 C07K A61K G01N

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)

BIOSIS, CHEM ABS Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KISHORE RAM ET AL: "Interaction of the NH-2-terminal domain of fibronectin with heparin: Role of the OMEGA-loops of the type 1 modules." JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 272, no. 27, 1997, pages 17078-17085, XP002182852 ISSN: 0021-9258 page 17079, left-hand column, line 3-9; figure 1 page 17083, left-hand column, last paragraph -right-hand column, paragraph 1 ---	1,4,5
X	WO 97 47312 A (COMMW BIOTECHNOLOGIES INC) 18 December 1997 (1997-12-18)	1,4,5, 10-12
Y	page 7, line 19 - line 21; claims 1-21 ---	7
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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

6 March 2002

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22.03.02

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INTERNATIONAL SEARCH REPORT

International Application No  
PCT/NL 01/00484

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>GUICHARD G. ET AL.: "ANTIGENIC MIMICRY OF NATURAL L-PEPTIDES WITH RETRO-INVERSO-PEPTIDOMIMETICS" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE. WASHINGTON, US, vol. 91, no. 21, 1 October 1994 (1994-10-01), pages 9765-9769, XP000652200 ISSN: 0027-8424 the whole document</p>	7
X	<p>MAYO K. H.: "Recent advances in the design and construction of synthetic peptides: for the love of basics or just for the technology of it" TRENDS IN BIOTECHNOLOGY, vol. 18, no. 5, May 2000 (2000-05), pages 212-217, XP004196002 ISSN: 0167-7799 page 216, left-hand column, paragraph 3</p>	1,4,5, 10-12
A	<p>R. J. M. MOORMANN ET AL.: "Recent developments in pig vaccination" PROCEEDINGS OF THE IPVS CONGRESS, 7 July 1996 (1996-07-07), XP002089688 page 28, left-hand column</p>	1-14
A	<p>EP 0 982 402 A (STICHTING INSTITUUT VOOR DIERH) 1 March 2000 (2000-03-01) the whole document</p>	1-14
X	<p>WO 97 49726 A (COLNAGHI MARIA INES ;MELE ANTONIO (IT); PARENTE DINO (IT); SANTIS) 31 December 1997 (1997-12-31) SEQ ID NO: 3</p>	1-6,8-12
Y	<p>page 1, line 20 - line 25 page 6, line 20 - line 30</p>	7
X	<p>MANCHENO J. M. ET AL.: "Predictive study of the conformation of the cytotoxic protein alpha-sarcin: A structural model to explain alpha-sarcin-membrane interaction." JOURNAL OF THEORETICAL BIOLOGY, vol. 172, no. 3, 1995, pages 259-267, XP002192216 ISSN: 0022-5193 figures 1,2 page 264, left-hand column, last paragraph page 266, left-hand column, last paragraph</p>	1-6

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/NL 01/00484

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>YANG X. ET AL.: "Insights into specificity of cleavage and mechanism of cell entry from the crystal structure of the highly specific Aspergillus ribotoxin, restrictocin."                      STRUCTURE,                      vol. 4, no. 7, 1996, pages 837-852,                      XP000971044                      ISSN: 0969-2126                      page 842, right-hand column, last paragraph                      page 847, right-hand column, line 1 -page 848, left-hand column, line 1</p> <p style="text-align: center;">---</p>	1-6
X	<p>FELDMAN S. A. ET AL.: "Identification of a linear heparin binding domain for human respiratory syncytial virus attachment glycoprotein G."                      JOURNAL OF VIROLOGY,                      vol. 73, no. 8, August 1999 (1999-08),                      pages 6610-6617, XP002192217                      ISSN: 0022-538X</p> <p style="text-align: center;">---</p>	1-6,8, 10-12
Y	<p>page 6612, left-hand column; figures 1,5</p> <p style="text-align: center;">---</p>	7
X	<p>WO 99 03987 A (NGUYEN THIEN NGOC ;PF                      MEDICAMENT (FR); POWER ULTAN (FR); BECK                      ALAI) 28 January 1999 (1999-01-28)                      SEQ IDs NO: 9 and 10</p> <p style="text-align: center;">-----</p>	1-6,8, 10-12

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/NL 01/00484

## 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 13 and 14, as far as an in vivo application and a method of treatment is concerned, 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:
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: 1-14 (partially)

An isolated, synthetic or recombinant peptide module having at least 50% sequence identity with a peptide located from at about amino acid position 194 to 220 in a pestiviral Erns protein; a compound provided with said module; a pharmaceutical composition comprising said module; the use of said module for the preparation of a pharmaceutical or cosmetic composition capable of membrane translocation or capable of eliciting antibiotic activity; and a method of translocating a compound over a membrane of a cell by employing said module.

2. Claims: 1-14 (partially)

An isolated, synthetic or recombinant peptide module having at least 50% sequence identity with a peptide located from at about amino acid position 59 to 88 in a L3 loop of a cytotoxic RNase of a ribosome-inactivating protein; a compound provided with said module; a pharmaceutical composition comprising said module; the use of said module for the preparation of a pharmaceutical or cosmetic composition capable of membrane translocation or capable of eliciting antibiotic activity; and a method of translocating a compound over a membrane of a cell by employing said module.

3. Claims: 1-14 (partially)

An isolated, synthetic or recombinant peptide module having at least 50% sequence identity with a peptide located from at about amino acid position 187-223 in a RSV G-protein; a compound provided with said module; a pharmaceutical composition comprising said module; the use of said module for the preparation of a pharmaceutical or cosmetic composition capable of membrane translocation or capable of eliciting antibiotic activity; and a method of translocating a compound over a membrane of a cell by employing said module.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/NL 01/00484

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
WO 9747312	A	18-12-1997	US 5877153 A	02-03-1999
			AU 3216797 A	07-01-1998
			CA 2257614 A1	18-12-1997
			EP 0907368 A1	14-04-1999
			JP 2001503018 T	06-03-2001
			WO 9747312 A1	18-12-1997
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			AU 5450399 A	06-03-2000
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			AU 8812398 A	10-02-1999
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