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Published:
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(88) Date of publication of the international search report:
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(54) Title: SYNTHETIC ANTIMICROBIAL POLYPEPTIDES

(57) Abstract: The present invention relates to polypeptides having antimicrobial activity and polynucleotides having a nucleotide sequence which encodes for the polypeptides. The invention also relates to nucleic acid constructs, vectors, and host cells comprising the nucleic acid constructs as well as methods for producing and using the polypeptides.

WO 2005/026204 A3

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07K14/47 A61K38/17

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 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, CHEM ABS Data, Sequence Search, WPI Data, PAJ, BIOSIS, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NIIDOME E.A.: "Antibacterial activity of Arg/Pro rich bactenecin 5 model peptides and their interaction with phospholipid membranes" BULL.CHEM.SOC.JPN, vol. 73, 2000, pages 1397-1402, XP008028277 the whole document	1-4,7-27
X	NIIDOME TAKURO ET AL: "Structure and property of model peptides of proline/arginine-rich region in bactenecin 5" JOURNAL OF PEPTIDE RESEARCH, vol. 51, no. 5, May 1998 (1998-05), pages 337-345, XP000739868 ISSN: 1397-002X the whole document	1-4,7-27

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[X] Further documents are listed in the continuation of box C.

[X] 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)

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
22 February 2005	18. 03. 2005

Name and mailing address of the ISA	Authorized officer
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	Groenendijk, M

INTERNATIONAL SEARCH REPORT

onal Application No
PCT/DK2004/000606

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 830 993 A (SHI JISHU ET AL) 3 November 1998 (1998-11-03) The whole document; see particularly Fig.1	1-4,7-27
X	RAJ P A ET AL: "Delineation of an active fragment and poly(L-proline) II conformation for candidacidal activity of bactenecin 5." BIOCHEMISTRY. UNITED STATES 9 APR 1996, vol. 35, no. 14, 9 April 1996 (1996-04-09), pages 4314-4325, XP002272963 ISSN: 0006-2960 See particularly Fig 1	1-4,7-27
X	WO 92/22578 A (LEE JONG YOUN ;MUTT VIKTOR (SE); BOMAN HANS G (SE); JOERNVALL HANS) 23 December 1992 (1992-12-23) the whole document	1-4,7-27
X	SHAMOVA O ET AL: "Purification and properties of proline-rich antimicrobial peptides from sheep and goat leukocytes." INFECTION AND IMMUNITY. AUG 1999, vol. 67, no. 8, August 1999 (1999-08), pages 4106-4111, XP002318719 ISSN: 0019-9567 The whole document; see particularly Fig.4	1-4,7-27
X	HUTTNER K M ET AL: "Localization and genomic organization of sheep antimicrobial peptide genes" GENE: AN INTERNATIONAL JOURNAL ON GENES AND GENOMES, ELSEVIER SCIENCE PUBLISHERS, BARKING, GB, vol. 206, no. 1, 5 January 1998 (1998-01-05), pages 85-91, XP004102876 ISSN: 0378-1119 The whole document; seeparticularly Fig.3	1-4,7-27
P,X	ANDERSON R C ET AL: "Isolation and characterisation of proline/arginine-rich cathelicidin peptides from ovine neutrophils" BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, ACADEMIC PRESS INC. ORLANDO, FL, US, vol. 312, no. 4, 26 December 2003 (2003-12-26), pages 1139-1146, XP004476395 ISSN: 0006-291X the whole document	1-4,7-27

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/DK2004/000606

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 665 239 A (CONSIGLIO NAZIONALE DELLE RICERCHE; CONSORZIO PER LO SVILUPPO INTERNAZ) 2 August 1995 (1995-08-02) the whole document	1-4,7-27

INTERNATIONAL SEARCH REPORT

rnational application No.
PCT/DK2004/000606

Box 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. [X] Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 16 and 21 encompass 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 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:

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. [X] 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.:

2,4(all complete);1,3,7-27(all partially)

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.

[X] 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: 1,3,7,9-27(all partially)

Compounds as defined in claim 1 wherein X1=X2=X3=X4=PPRF and X5 =PFRP, their preparation, compositions and use; DNA encoding them and transformed plants therewith.

1.1. claims: 2,4(all complete);1,3,7-27(all partially)

Compounds as defined in claims 2 and 4, their preparation, compositions and use; DNA encoding them and transformed plants therewith.

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2. claims: 5,6(all complete);1,3,7-27(all partially)

Compounds as defined in claims 1 and 3 as far as not comprised in subject 1 and claims 2 and 4, their preparation, compositions and use; DNA encoding them and transformed plants therewith.
(for subdivision: see reasoning)

INTERNATIONAL SEARCH REPORT

nformation on patent family members

International Application No
PCT/DK2004/000606

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