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(BE). NAUWYNCK, Hans [BE/BE]; Kerkoek 24,  
B-9930 Zomergem (BE). VANDERHEIJDEN, Nathalie  
[BE/BE]; Motsenstraat 7, B-9820 Merelbeke (BE).

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(74) Agents: VAN GENT, M. et al.; P.O. Box 31, NL-5830 AA  
Boxmeer (NL).

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(71) Applicants (*for all designated States except US*): **AKZO  
NOBEL, N.V.** [NL/NL]; Velperweg 76, NL-6824 BM Arn-  
hem (NL). **UNIVERSITEIT GENT** [BE/BE]; Sint Pieter-  
nieuwstraat 25, B-9000 Gent (BE).

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(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **PENSAERT,  
Maurice** [BE/BE]; Baredonkdreef 14, B-9290 Berlare

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ance Notes on Codes and Abbreviations" appearing at the begin-  
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**WO 03/010200 A3**

(54) Title: NUCLEIC ACID ENCODING POLYPEPTIDE INVOLVED IN CELLULAR ENTRANCE OF THE PRRS VIRUS

(57) Abstract: The present invention relates to a new polynucleotide that encodes a polypeptide involved in cellular entrance of PRRSV, to a recombinant vector comprising said polynucleotide, to a cell capable of expressing said polypeptide, a method of producing said polypeptide as well as to cell culture and to a novel method of producing the PRRSV virus. The present invention further relates to a method of identifying compounds that affect the PRRSV receptor function of the polypeptide as well as to the use of the polypeptide or identified compounds in the manufacture of medicaments. The present inventors have succeeded in isolating a protein from PAM membranes that seems to play a crucial role in virus entry into the cell. The elucidated nucleotide sequence encoding the protein, as well as the amino acid sequence of the protein, were compared with sequences stored in sequence databases. Surprisingly the putative PRRSV receptor provided by the present invention showed a great deal of homology to certain proteins belonging to the Siglec family.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 02/08047

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 C12N15/86 C12N15/12 C12N7/00 C12N5/10 C07K14/705  
 A61K38/17 G01N33/68

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

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, MEDLINE, BIOSIS, CHEM ABS Data, SEQUENCE SEARCH

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DUAN X ET AL: "Identification of a putative receptor for porcine reproductive and respiratory syndrome virus on porcine alveolar macrophages" JOURNAL OF VIROLOGY, THE AMERICAN SOCIETY FOR MICROBIOLOGY, US, vol. 72, no. 5, May 1998 (1998-05), pages 4520-4523, XP002176291 ISSN: 0022-538X cited in the application	10-15
Y	page 4520 -page 4523  -----  -/--	1-9, 16-19



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  <b>30 October 2002</b>	Date of mailing of the international search report  <b>25/11/2002</b>
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Name and mailing address of the ISA 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	Authorized officer  <p style="text-align: center; font-weight: bold;">Fotaki, M</p>
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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 02/08047

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DUAN X ET AL: "PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS INFECTION FO ALVEOLAR MACROPHAGES CAN BE BLOCKED BY MONOCLONAL ANTIBODIES AGAINST CELL SURFACE ANTIGENS" ADVANCES IN EXPERIMENTAL MEDICINE AND BIOLOGY, SPRING ST., NY, US, vol. 440, 1998, pages 81-88, XP001029679 ISSN: 0065-2598 cited in the application	10-15
Y	page 81-88	1-9, 16-19
X	--- NAUWYNCK H ET AL: "PRRSV-MACROPHAGE INTERACTION AND PUTATIVE RECEPTORS" VETERINARY RESEARCH, ELSEVIER, PARIS, NL, vol. 31, no. 1, January 2000 (2000-01), page 22 XP001029623 ISSN: 0928-4249 cited in the application	10-15
Y	page 22	1-9, 16-19
X	--- DUAN X ET AL: "Effects of origin and state of differentiation and activation of monocytes/macrophages on their susceptibility to porcine reproductive and respiratory syndrome virus (PRRSV)" ARCHIVES OF VIROLOGY, NEW YORK, NY, US, vol. 142, no. 12, 1997, pages 2483-2497, XP002181692 ISSN: 0304-8608 page 2483 -page 2497	15
A	--- NAUWYNCK H J ET AL: "ENTRY OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS INTO PORCINE ALVEOLAR MACROPHAGES VIA RECEPTOR-MEDIATED ENDOCYTOSIS" JOURNAL OF GENERAL VIROLOGY, SOCIETY FOR GENERAL MICROBIOLOGY, READING, GB, vol. 80, no. 2, February 1999 (1999-02), pages 297-305, XP001029625 ISSN: 0022-1317	
A	--- TERRIEN ET AL: "Preliminary characterization of protein binding factor for porcine reproductive and respiratory syndrome virus on the surface of permissive and non-permissive cells" ARCHIVES OF VIROLOGY, NEW YORK, NY, US, vol. 145, no. 6, 2000, pages 1099-1116, XP002181693 ISSN: 0304-8608 -----	

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP 02/08047

## 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 18, 19 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.: 16, 18  
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:

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

Continuation of Box I.2

Claims Nos.: 16, 18

Present claims 16, 18 relate to a compound defined by reference to a desirable characteristic, namely that of a compound capable of affecting the PRRSV receptor function. The claims cover all compounds having this characteristic whereas the application provides support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT only for a specific monoclonal antibody, called 41D3. Consequently, the search has been carried out for those parts of said claims which appear to be clear, supported and disclosed, namely those parts relating to monoclonal antibody 41D3.

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.