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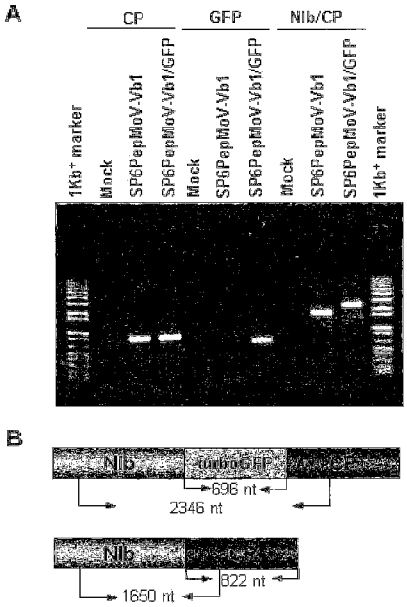
[Continued on next page]

(54) Title: HIGHLY INFECTIOUS NUCLEIC ACID MOLECULES FROM PEPPER MOTTLE VIRUS AND PLANT VIRAL VECTOR DERIVED FROM THE SAME

Fig. 4



(57) Abstract: The present invention relates to a plant-infectious nucleic acid molecule from Pepper mottle virus, and a viral vector, a transformed cell and a transgenic plant having it. The present invention first achieves the cloning of the infectious full-length pepper mottle virus cDNA from virus-infected pepper, which enables to perform the molecular biological studies to the infectivity of pepper mottle virus in pepper and tobacco and to provide a plant virus-based vector to highly express a useful foreign protein.

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Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

— *with sequence listing part of description (Rule 5.2(a))*

(88) Date of publication of the international search report:
3 September 2009

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2008/005716

A. CLASSIFICATION OF SUBJECT MATTER

C12N 15/33(2006.01)i

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 C12N 15/33, C12N 15/63, C12N 15/00, C12N 5/00, A01K 33/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility Models and Applications for Utility Models since 1975
Japanese Utility Models and Applications for Utility Models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS, WPI, USPTO, PAJ, NCBI, INSPECT "pepper mottle virus, plant, viral vector, SEQ ID NO:1, CaMV 35S promoter, SP6, T7, ssRUBISCO, etc."

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Virology, Vol.191 (1): 19-30 (1992) "The complete nucleotide sequence of pepper mottle virus genomic RNA: comparison of the encoded polyprotein with those of other sequenced potyviruses" - see the whole document	1-11
A	NCBI sequence accession no.AY748921, GI:53854598, 12 Oct 2004 - see the sequence	1-11
A	Phytopathology, Vol.88 (7): 648-657 (1998) "Sinaloa tomato leaf curl geminivirus: Biological and molecular evidence for a new subgroup III virus" - see the whole document	1-11
A	Transgenic Res., Vol.11(2): 215-219 (2002) "The potential use of a viral coat protein gene as a transgene screening marker and multiple virus resistance of pepper plants coexpressing coat proteins of cucumber mosaic virus and tomato mosaic virus" - see the whole document	1-11

☒ Further documents are listed in the continuation of Box C. ☐ See patent family 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 application or patent 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 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	Date of mailing of the international search report
22 JULY 2009 (22.07.2009)	**22 JULY 2009 (22.07.2009)**
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer KIM Kee-Yeun Telephone No. 82-42-481-8387

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2008/005716

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of :

   a. type of material
   - [x] a sequence listing
   - [ ] table(s) related to the sequence listing

   b. format of material
   - [ ] on paper
   - [x] in electronic form

   c. time of filing/furnishing
   - [ ] contained in the international application as filed
   - [ ] filed together with the international application in electronic form
   - [x] furnished subsequently to this Authority for the purposes of search

2. [x] In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2008/005716

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Arch. Virol., Vol.152(7): 1401-1407 (5 Mar 2007) "Complete genome sequence supports bell pepper mottle virus as a species of the genus Tobamovirus" - see the whole document	1-11