

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
4 January 2007 (04.01.2007)

PCT

(10) International Publication Number  
**WO 2007/002470 A3**

(51) International Patent Classification:  
A61K 39/12 (2006.01) A61K 39/193 (2006.01)

(21) International Application Number:  
PCT/US2006/024584

(22) International Filing Date: 23 June 2006 (23.06.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/693,629 24 June 2005 (24.06.2005) US

(71) Applicant (for all designated States except US): INTER-  
VET INTERNATIONAL B.V. [NL/NL]; Wim De Ko-  
rverstraat 35, NL-5831 An Boxmeer (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): STERNER, Frank,  
Jay [US/US]; 5 Metz Way, Rehoboth Beach, DE 19971  
(US). GOOVAERTS, Daniel, Ghislina Emiel [BE/BE];  
Langenberg 18, B-2460 Lichtaart (BE). LUM, Melissa,  
Anne [US/US]; 61 Glade Circle East, Rehoboth Beach, DE  
19971 (US). MELLENCAMP, Mark, William [US/US];  
510 N. Leonard Road, St. Joseph, MS 64506 (US).

(74) Agent: SCHWARTZ, Aaron, L.; Intervet Inc., Patent De-  
partment, P.O. Box 318, Millsboro, DE 19966-0358 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP,  
KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT,  
LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA,  
NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC,  
SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ,  
UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,  
RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:  
— of inventorship (Rule 4.17(iv))

Published:  
— with international search report

(88) Date of publication of the international search report:  
1 November 2007

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: INACTIVATED CHIMERIC VACCINES AND RELATED METHODS OF USE

(57) Abstract: Embodiments of the present invention generally provide an inactivated chimeric virus vaccine and/or immunogenic composition for the treatment or prevention of viral infection. Further, various other mbodyments of the present invention generally relate to methods of preventing and treating virus infection in such animals with the inactivated vaccine and/or immunogenic composition. Other embodiments comprise methods of preparing a vaccine or immunogenic composition for the treatment or prevention of viral infection in such animals.



WO 2007/002470 A3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 06/24584

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(8): A61K 39/12, 39/193 (2007.01) USPC: 424/93.1 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) USPC: 424/93.1 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 424/93.2, 93.6, 176.1, 218.1, 227.1, 281.1 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Database(s) searched: WEST and Google Scholar Term(s) searched: chimeric, flavivirus, yellow fever, west nile, 17D, vaccine, bacterial antigen		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 6,696,281 B1 (CHAMBERS et al.) 24 February 2004 (24.02.2004), Abstract; col 2, ln 45-67; col 3, ln 19-39; col 3, ln 57-65; col 11, ln 60-62; col 17, ln 7-33; col 22, ln 1-6; col 67, ln 1-10; col 81, ln 1-9; col 81, ln 65-67; col 154, ln 23-26; Fig. 8	1-17 ----- 18-20
Y	US 6,541,011 B2 (PUNNONEN et al.) 01 April 2003 (01.04.2003), col 18, ln 46-66; col 68, ln 40 to col 69, ln 5	18-20
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
* 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 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 25 June 2007 (25.06.2007)		Date of mailing of the international search report <p style="text-align: center; font-size: 1.2em;"><b>09 AUG 2007</b></p>
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201		Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774