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- (71) **Applicant (for all designated States except US):** UAB RESEARCH FOUNDATION [US/US]; 701 S. 20th Street, Suite 1120G, Birmingham, Alabama 35294-0111 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** FROLOV, Ilya [US/US]; 4916 Altamont Road S., Birmingham, Alabama 35222 (US). FROLOVA, Elena [US/US]; 4916 Altamont Road S., Birmingham, Alabama 35222 (US).
- (74) **Agent:** MYERS BIGEL SIBLEY & SAJOVEC, P.A.; P.O. Box 37428, Raleigh, North Carolina 27627 (US).
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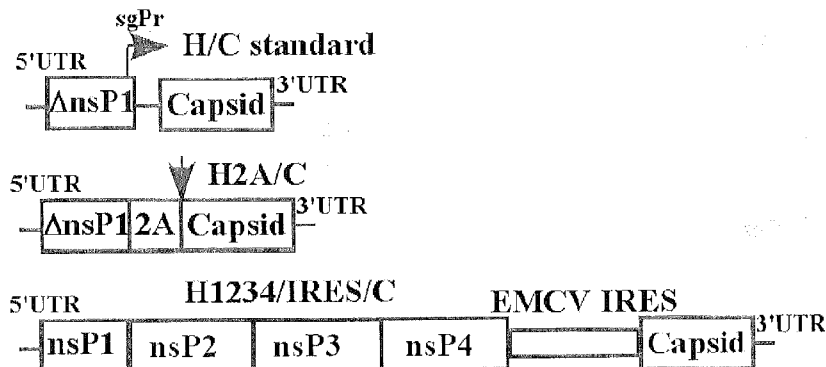
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(54) **Title:** METHODS AND COMPOSITIONS FOR PSEUDOINFECTIONOUS ALPHAVIRUSES

Fig. 1



(57) **Abstract:** The present invention provides pseudoinfectious alphavirus particles and methods of making them and using them to produce an immune response to an alphavirus in a subject.

WO 2012/106403 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/023444**A. CLASSIFICATION OF SUBJECT MATTER***C12N 7/00(2006.01)i, A61K 35/76(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)

C12N 7/00; A61K 39/395; C07H 21/04; C12N 7/04; C12N 5/10; A61K 49/00; C07K 7/06; C12P 21/02; A61K 39/12; C12N 15/85

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

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: pseudoinfectious, noninfectious, alphavirus, mutation, positively charged amino acids, RNA binding domain

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009-0155301 A1 (MASON, P. W. et al.) 18 June 2009 See the whole document.	1-7,12-14
A	US 2010-0015179 A1 (FROLOV, I. V. et al.) 21 January 2010 See the whole document.	1-7,12-14
A	US 2006-0251678 A1 (FROLOV, I. et al.) 09 November 2006 See the whole document.	1-7,12-14
A	US 05843723 A (DUBENSKY, JR., T. W. et al.) 01 December 1998 See the whole document.	1-7,12-14
A	US 6465634 B1 (DUBENSKY, JR., T. W. et al.) 15 October 2002 See the whole document.	1-7,12-14
PA	US 2011-0207223 A1 (TANG, Z. et al.) 25 August 2011 See the whole document.	1-7,12-14
PA	US 2011-0027183 A1 (MIER, W. et al.) 03 February 2011 See the whole document.	1-7,12-14

 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

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"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

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Date of the actual completion of the international search

28 AUGUST 2012 (28.08.2012)

Date of mailing of the international search report

29 AUGUST 2012 (29.08.2012)

Name and mailing address of the ISA/KR

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Authorized officer

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2012/023444**Box No. 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. Claims Nos.: 10, 11
because they relate to subject matter not required to be searched by this Authority, namely:
Said claims pertain to methods for treatment of the human body, thus relate to a subject-matter which International Searching Authority is not required to search under PCT Art. 17(2)(a)(i) and Rule 39.1(iv).
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.: 8-11
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. 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:

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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

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