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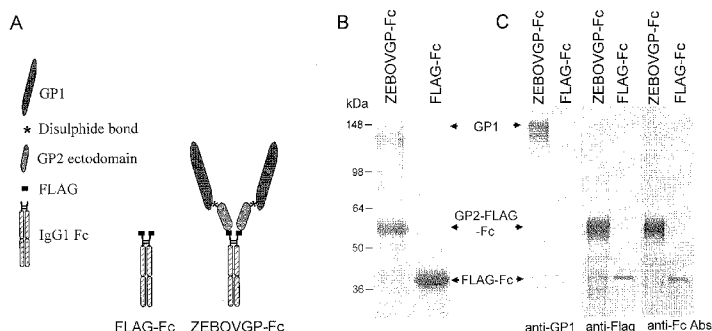
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[Continued on next page]

(54) Title: FILOVIRUS FUSION PROTEINS AND THEIR USES

FIGURE 1



(57) **Abstract:** This invention provides fusion proteins comprising a Filovirus glycoprotein segment and an immunoglobulin polypeptide segment. The fusion proteins are useful in immunogenic compositions to protect against infections by Filoviruses, such as Ebola virus, in both humans and non-human animals. The fusion proteins are also useful in diagnostic assays to detect Filovirus infections.



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INTERNATIONAL SEARCH REPORT

International application No.
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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.:
because they relate to subject matter not required to be searched by this Authority, namely:
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 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:

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 fees, this Authority did not invite payment of additional fees.
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.:

1-28

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

International application No
PCT/US2011/058418

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	& WARANYOO PHOOLCHAROEN ET AL: "Expression of an immunogenic Ebola immune complex in Nicotiana benthamiana", PLANT BIOTECHNOLOGY JOURNAL, vol. 9, no. 7, 1 September 2011 (2011-09-01), pages 807-816, XP008157354, WILEY-BLACKWELL PUBLISHING LTD, UNITED KINGDOM ISSN: 1467-7652, DOI: 10.1111/J.1467-7652.2011.00593.X [retrieved on 2011-02-01] the whole document -----	20-28
Y	WO 2006/046963 A2 (U S ARMY MEDICAL RES INST OF I [US]; BAVARI SINA [US]; AMAN M JAVAD [U] 4 May 2006 (2006-05-04) page 7, lines 5-23 page 8, lines 4-11 page 21, lines 1-10 page 25, lines 8-34 page 27, line 27 - page 28, line 22 page 38, line 24 - page 39, line 28 examples 9-12 -----	20-22, 24-28
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2011/058418

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-28

fusion protein comprising a Filovirus glycoprotein segment and an immunoglobulin polypeptide segment. Immunogenic composition comprising the fusion protein. Nucleic acid vector comprising a nucleic acid encoding the fusion protein. Method for inducing a protective immune response using the fusion protein. Method for detecting an immune response against Filovirus using the fusion protein.

2. claims: 29-35

Method of detecting neutralizing antibodies in a biological sample comprising contacting the sample with a cell susceptible to Filovirus infection and a recombinant Vesicular Stomatitis Virus expressing a Filovirus glycoprotein.
