Semantic Content Enrichment

Sam Herbert

Overview

Science article abstract:

1. What semantic information can we add?
2. What are the benefits to the content consumer?

Ebola Virus Can Be Effectively Neutralized by Antibody Produced in Natural Human Infection

The activity of antibodies against filoviruses is poorly understood but has important consequences for vaccine design and passive prophylaxis. To investigate this activity, a panel of recombinant human monoclonal antibodies to Ebola virus antigen was isolated from phage display libraries constructed from RNA from donors who recovered from infection in the 1995 Ebola virus outbreak in Kikwit, Democratic Republic of Congo. Antibodies reactive with nucleoprotein (NP), envelope glycoprotein (GP), and secreted envelope glycoprotein (sGP) were characterized by immunofluorescence and radioimmunoprecipitation assays. Four antibodies reacting strongly with sGP and weakly with GP and two antibodies reacting with NP were not neutralizing. An antibody specific for GP neutralized Ebola virus to 50% at 0.4 μg/ml as the recombinant Fab fragment and to 50% at 0.3 μg/ml (90% at 2.6 μg/ml) as the corresponding whole immunoglobulin G1 molecule. The studies indicate that neutralizing antibodies are produced in infection by Ebola virus although probably at a relatively low frequency. The neutralizing antibody may be useful in vaccine design and as a prophylactic agent against Ebola virus infection.

Toshiaki Maruyama,1 Luis L. Rodriguez,2,† Peter B. Jahrling,3 Anthony Sanchez,2 Ali S. Khan,2 Stuart T. Nichol,2 C. J. Peters,2 Paul W. H. I. Parren,1 and Dennis R. Burton1,* Ebola Virus Can Be Effectively Neutralized by Antibody Produced in Natural Human Infection.

Keywords

The activity of antibodies against filoviruses is poorly understood but has important consequences for vaccine design and passive prophylaxis. To investigate this activity, a panel of recombinant human monoclonal antibodies to Ebola virus antigens was isolated from phage display libraries constructed from RNA from donors who recovered from infection in the 1995 Ebola virus outbreak in Kikwit, Democratic Republic of Congo. Antibodies reactive with nucleoprotein (NP), envelope glycoprotein (GP), and secreted envelope glycoprotein (sGP) were characterized by immunofluorescence and radioimmunoprecipitation assays. Four antibodies reacting strongly with sGP and weakly with GP and two antibodies reacting with NP were not neutralizing. An antibody specific for GP neutralized Ebola virus to 50% at 0.4 µg/ml as the recombinant Fab fragment and to 50% at 0.3 µg/ml (90% at 2.6 µg/ml) as the corresponding whole immunoglobulin G1 molecule. The studies indicate that neutralizing antibodies are produced in infection by Ebola virus although probably at a relatively low frequency. The neutralizing antibody may be useful in vaccine design and as a prophylactic agent against Ebola virus infection.

Keywords

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Entities (genes and proteins)

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Accession number (ID): Q05320
Alternative names: GP1, GP2, GP2-delta
Virus host: Homo sapiens, Franquet's epauleted fruit bat, Little collared fruit bat

Entities (genes and proteins)

Inline Linking

Semantic Search

The activity of antibodies against filoviruses is poorly unde
consequences f va e design and passive prophylaxis. To i y, a
panel c cor monoclonal antibodies to Ebola rus tig was
isolate es constructed from RNA from do ors w o recovered
fro a virus outbreak in Kikwit, Democratic Republic of
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Entities (medical)

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MeSHID=D029043
Tree=Viruses/Vertebrate Viruses/RNA Viruses/Mononegavirales/Filoviridae
TreeNumber=B04.820.455.300.200

Entities (medical)

Entity Pages

Taxonomic Browsing

MeSHID=D029043
Tree=Viruses/Vertebrate Viruses/RNA Viruses/Mononegavirales/Filoviridae
TreeNumber=B04.820.455.300.200

Faceted Search

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secreted [illegible] (sGP) were characterize[illegible] immunofluorescence and
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The neutralizing antibody may be useful in vaccine design[illegible]
against Ebola virus infection.

Entities (places)

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Population=186991
Geoid=2314705 (Identifier in Geonames DB)
Admindiv1=Bandundu
Longitude=18.818
Latitude=-5.039

Entities (places)

Map Visualisation

The activity of antibodies aga ut has important consequences for va investigate this activity, a panel of recombinant hu virus antigens was isolated from pl from donors who recovered from infection in the 1 wit , D ocratic Republic of Congo . Antibodies re (N nvelope glycoprotein (GP), and secreted envelope glycopro GP were charac by immunofluorescence and radioimmunoprecipitation a ays. Four antibod ongly with sGP and we An antibody sp nt Fab fra whole im es are pr quency. The neutralizing antibody may be useful in vaccine design and as a prophylactic agent against Ebola virus infection.

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Relationships

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Entity A: Envelope glycoprotein
Entity B: Ebola virus
Reaction type: Inhibition:Neutralise

Relationships

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Entity B: Ebola virus
Reaction type: Inhibition:Neutralise

Workflow Integration

Advanced Search

stm

Classification - what is this content about?

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Virology

Classification - what is this content about?

Virology

Content Slices

Virtual Issues

Article semantic fingerprint

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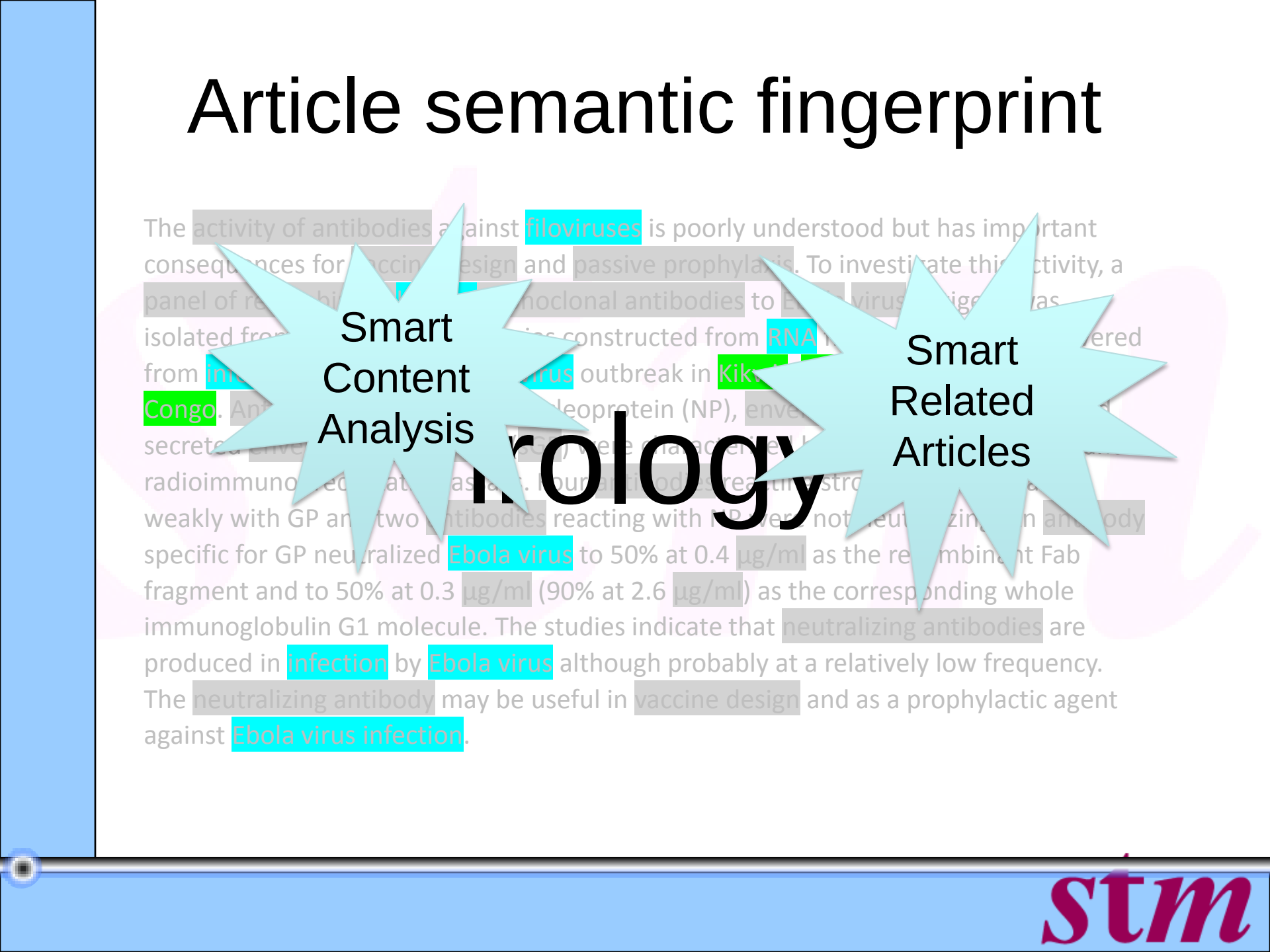
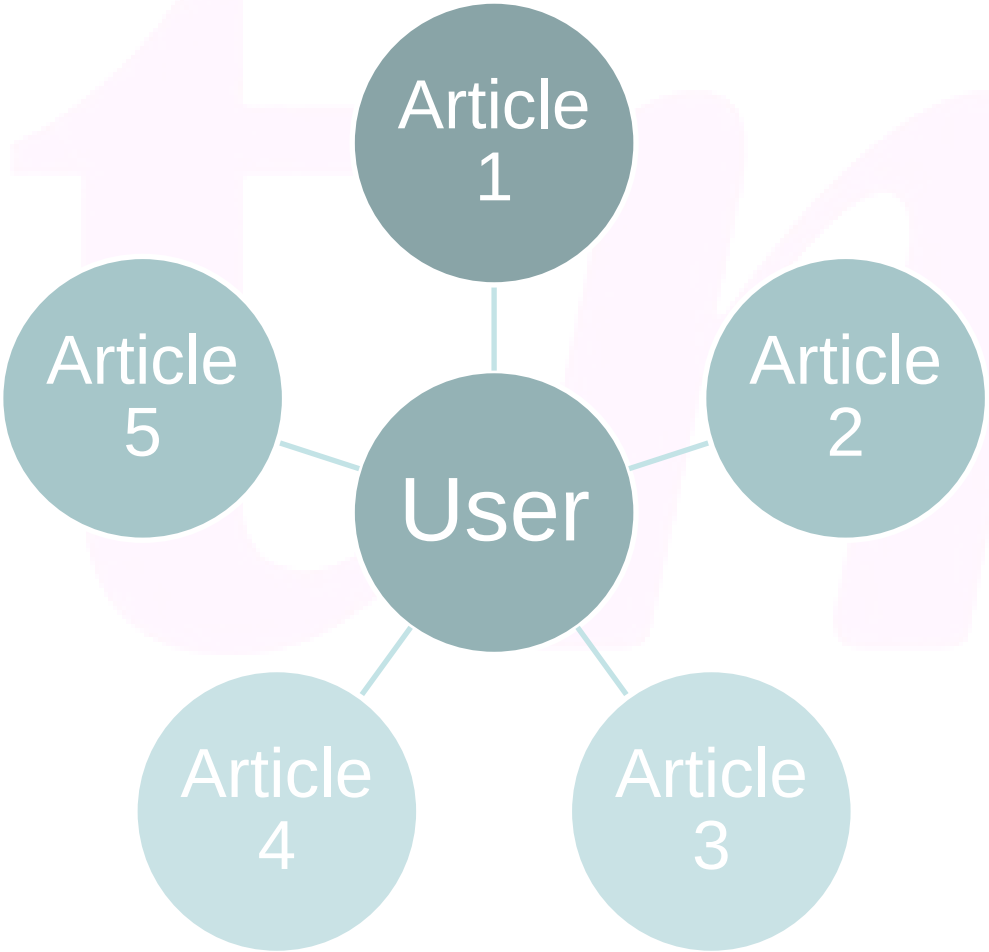
Virology

Article semantic fingerprint

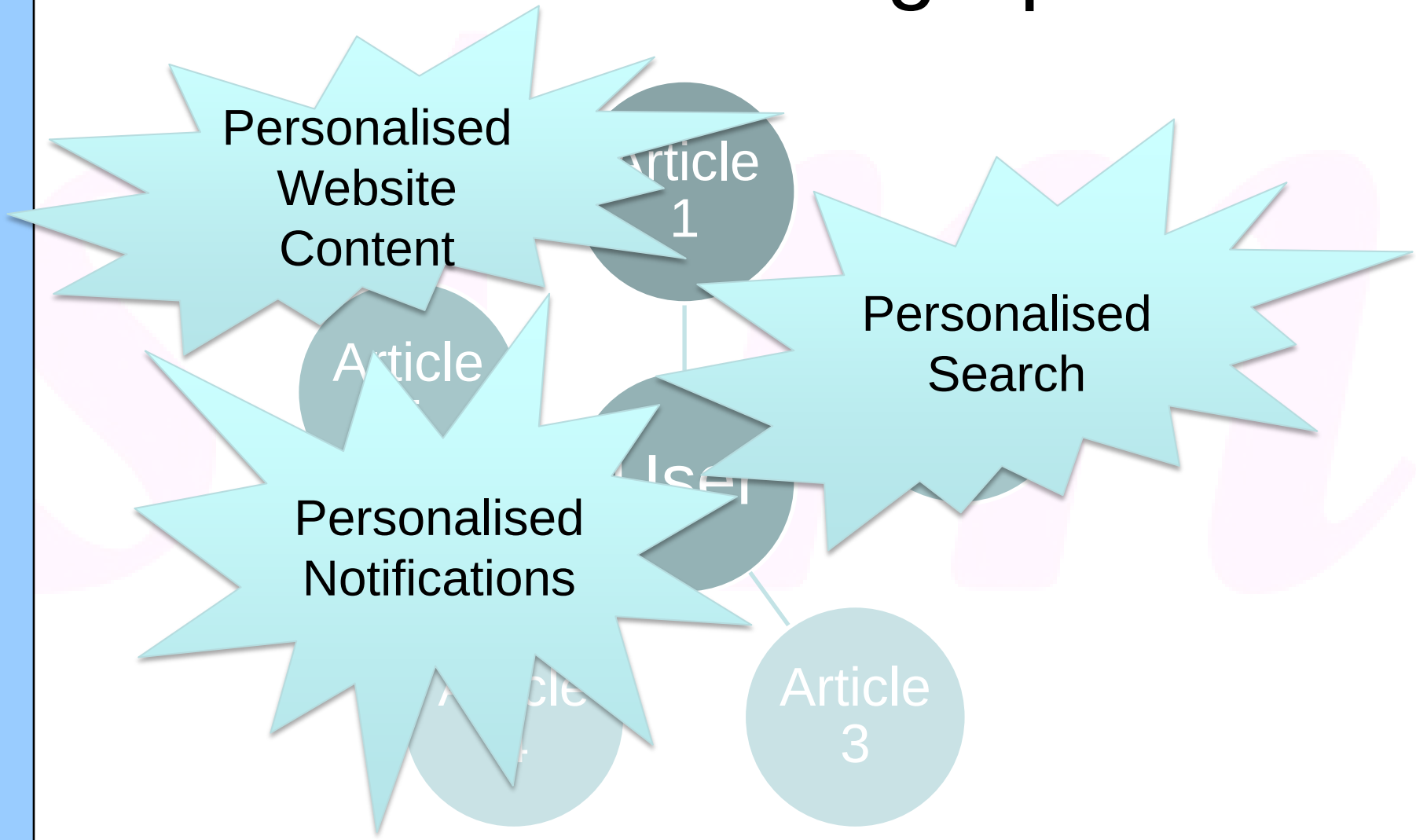


The activity of antibodies against filoviruses is poorly understood but has important consequences for vaccine design and passive prophylaxis. To investigate this activity, a panel of rabbit monoclonal antibodies to Ebola virus antigen was isolated from libraries constructed from RNA recovered from individuals during the virus outbreak in Kikwit, Congo. Antibodies to nucleoprotein (NP), envelope glycoprotein (GP), and secreted envelope glycoprotein (sGP) were characterized by radioimmunoprecipitation and enzyme-linked immunosorbent assay. Four antibodies reacting strongly with GP and two antibodies reacting with NP were not neutralizing. An antibody specific for GP neutralized Ebola virus to 50% at 0.4 μg/ml as the recombinant Fab fragment and to 50% at 0.3 μg/ml (90% at 2.6 μg/ml) as the corresponding whole immunoglobulin G1 molecule. The studies indicate that neutralizing antibodies are produced in infection by Ebola virus although probably at a relatively low frequency. The neutralizing antibody may be useful in vaccine design and as a prophylactic agent against Ebola virus infection.

User semantic fingerprint



User semantic fingerprint



Semantic Content Enrichment

Core competency for
information providers and publishers

Time's Up!

About your speaker:

Name: Sam Herbert

Company: 67 Bricks Ltd.

Tel: +44 7734 138 274

Email: sam.Herbert@67bricks.com

Social Media: uk.linkedin.com/in/samherbert