
Serological Evidence of Henipaviruses and Filoviruses in Wildlife, Malaysia

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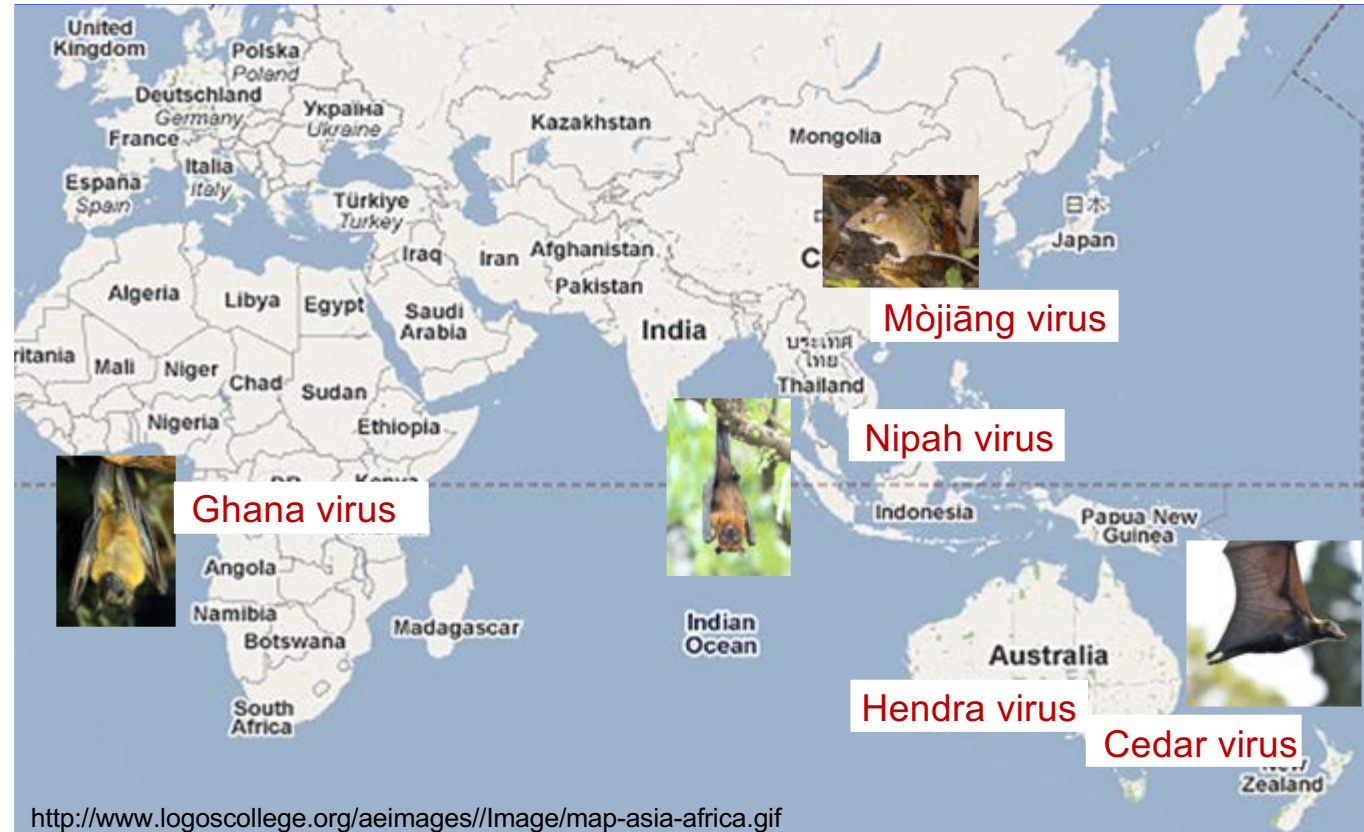
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BACKGROUND. Filoviruses, Ebola virus and Marburg virus, and henipaviruses, Nipah virus and Hendra virus, are 1) globally distributed, 2) naturally persist in bats, and 3) biosecurity threats



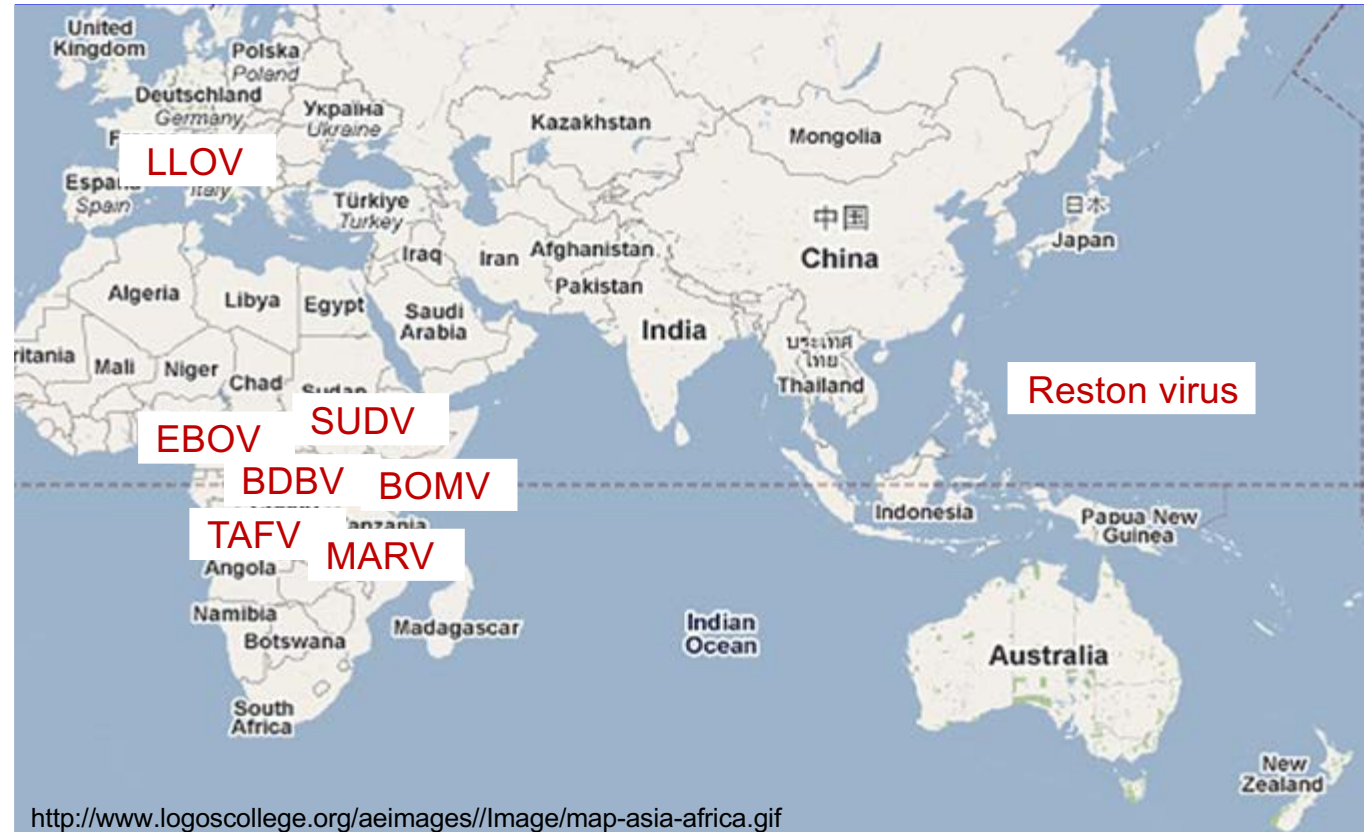
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Reston Ebolavirus Antibodies in Bats, the Philippines

To the Editor: Filoviruses cause highly lethal hemorrhagic fever in humans and nonhuman primates, except for Reston Ebolavirus (REBOV), which causes severe hemorrhagic fever in macaques (1,2). REBOV epizootics among cynomolgus macaques occurred in 1989, 1990, 1992, and 1996 (2) and among swine in 2008 (3). African fruit bats have been suggested to be natural reservoirs for Zaire Ebolavirus and Marburg virus (4-6). However, the natural reservoir of REBOV in the Philippines is unknown. Thus, we determined the prevalence of REBOV antibody-positive bats in the Philippines.



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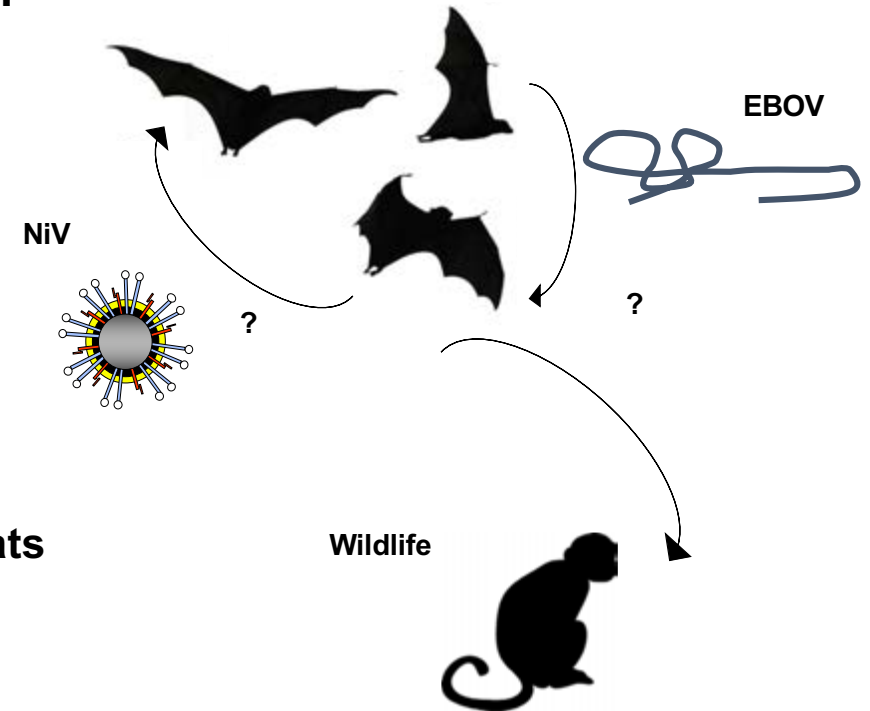


HYPOTHESIS.

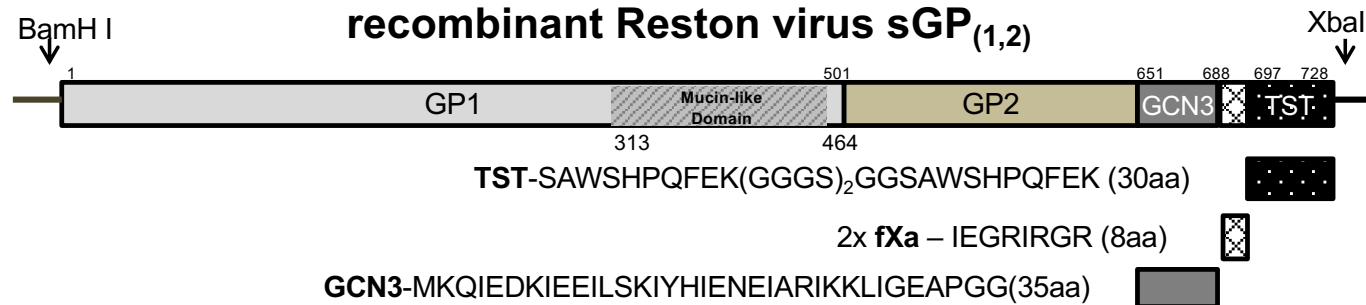
Henipaviruses and filoviruses circulate within multiple bat reservoirs and that spillover of these viruses to non-human primate populations has occurred in Malaysia

OBJECTIVES.

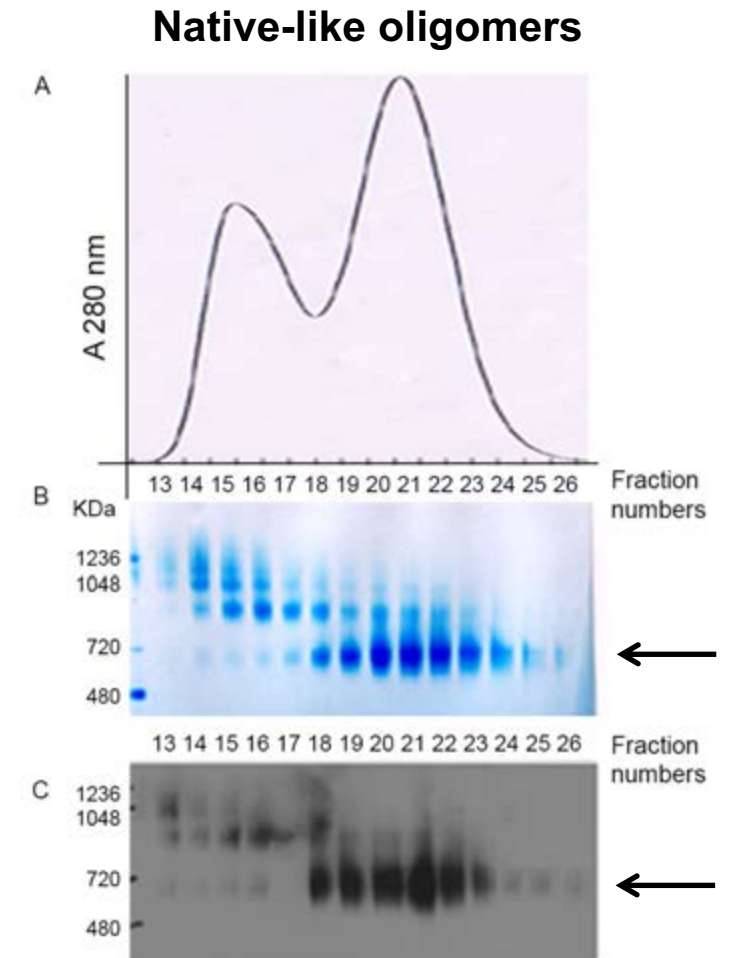
- Enhance capacity for serological biosurveillance of highly pathogenic zoonotic viruses in partner labs
- Characterize distribution of filoviruses and henipaviruses in bats and non-human primates (NHPs)



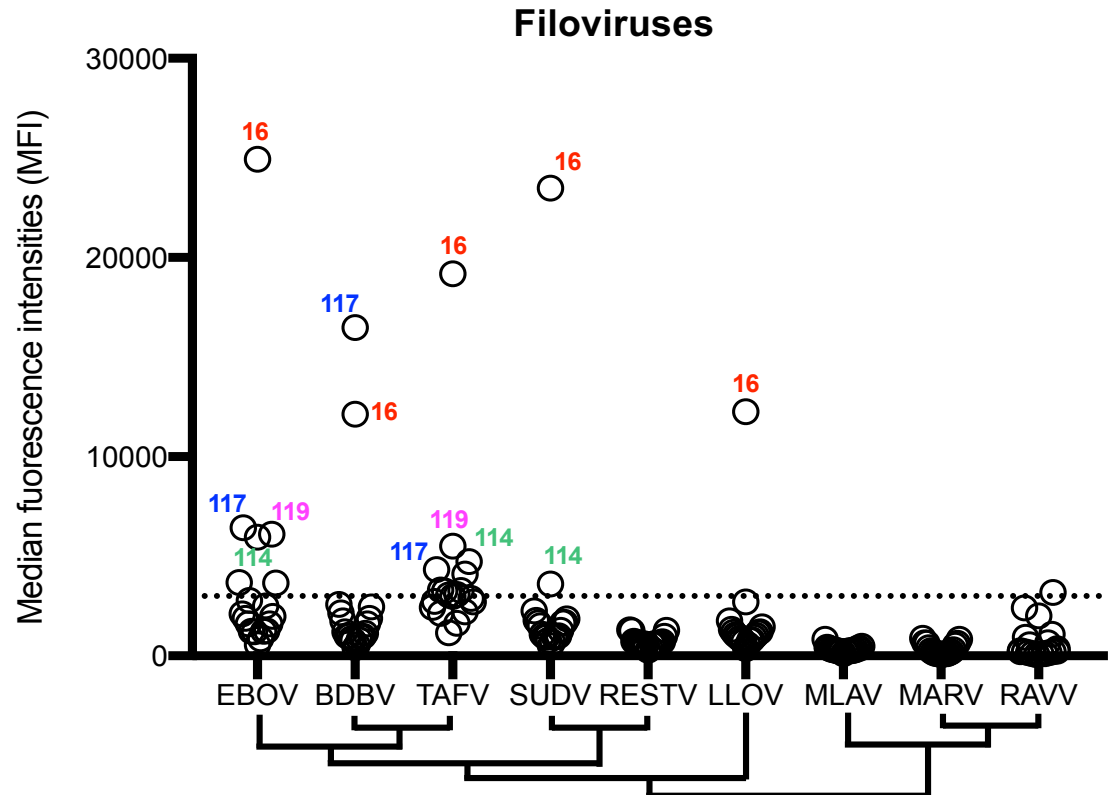
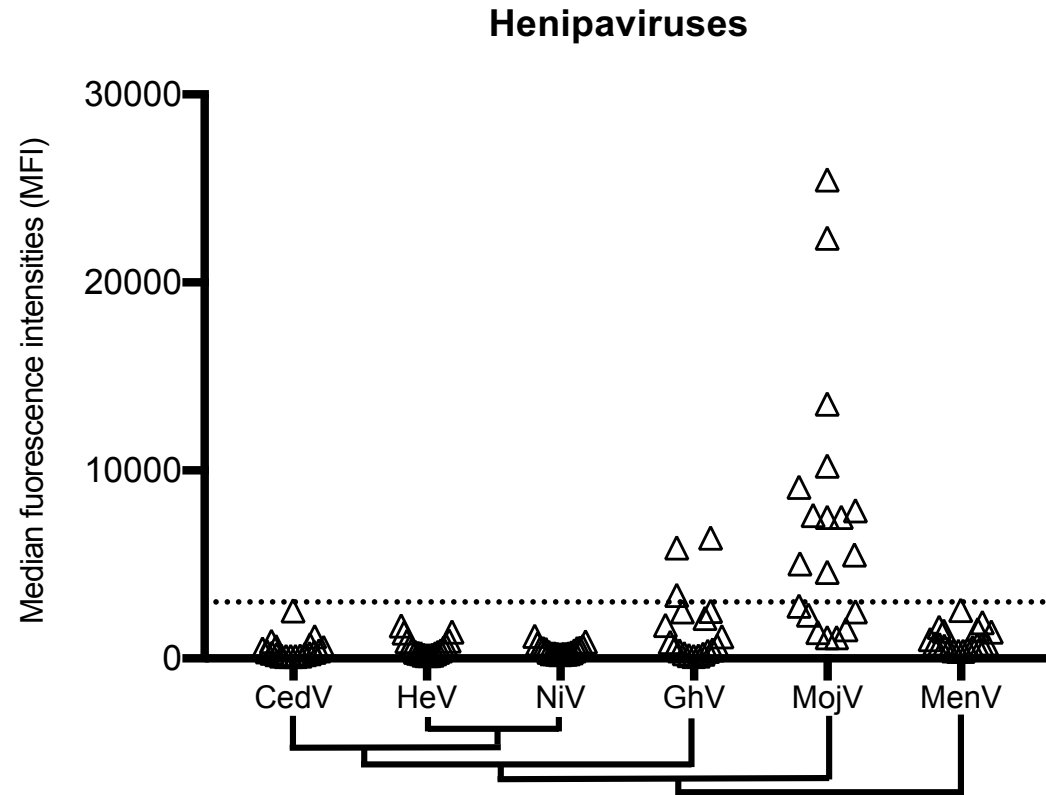
METHODS. Virus Antigen and Multiplex Microsphere Immunoassay



- Expression in a mammalian cell culture system
 - Retention of post-translation modifications (eg. glycosylations)
- Material and technology transfer to partner labs



RESULTS. *Macaca fascicularis* sera reacted with Mòjiāng virus G and *Ebolavirus* spp. excluding Reston virus



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CONCLUSIONS and FUTURE DIRECTIONS.

1) A greater distribution of henipaviruses in bats and NHPs

- Distinct NiV serological patterns in *Cynopterus*, *Hipposideros* and *Rhinolophus* samples
- Antibodies reactive with Mòjiāng virus in NHPs and bats

2) Filovirus serological cross-reactions – are these known or novel viruses ?



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Serologic Evidence of Fruit Bat Exposure to Filoviruses, Singapore, 2011–2016

Eric D. Laing¹, Ian H. Mendenhall¹, Martin Linster¹,
Julia S. L. Lim, Maggie Skiles, Benjamin P. Y.-H. Lee

DISPATCHES

Filovirus RNA in Fruit Bats, China

Biao He,¹ Yun Feng,¹ Hailin Zhang,¹ Lin Xu,
Weihong Yang, Yuzhen Zhang, Xingyu Li,
Changchun Tu

Author affiliations: Academy of Military Medical Sciences, Jilin, China (B. He, L. Xu, X. Li, C. Tu); Yunnan Institute of Endemic Diseases Control and Prevention, Dali, China (Y. Feng, H. Zhang, W. Yang, Y. Zhang); Jiangsu Co-innovation Center for Prevention and Control of Important Animal Infectious Diseases and Zoonoses, Yangzhou University, Yangzhou, China (C. Tu)

DOI: <http://dx.doi.org/10.3201/eid2109.150260>

Genetically Diverse Filoviruses in *Rousettus* and *Eonycteris* spp. Bats, China, 2009 and 2015

Xing-Lou Yang,¹ Yun-Zhi Zhang,¹ Ren-Di Jiang,¹
Hua Guo, Wei Zhang, Bei Li, Ning Wang, Li Wang,
Cecilia Waruhiu, Ji-Hua Zhou, Shi-Yue Li,
Peter Daszak, Lin-Fa Wang, Zheng-Li Shi

the world, long-term surveillance for better understanding and ecology of these viruses to determine the diversity of filoviruses in southern Anhui Province, China.

DISPATCHES

Ebola Virus Antibodies in Fruit Bats, Bangladesh

Kevin J. Olival, Ariful Islam, Meng Yu,
Simon J. Anthony, Jonathan H. Epstein,
Shahneaz Ali Khan, Salah Uddin Khan,
Gary Cramer, Lin-Fa Wang, W. Ian Lipkin,
Stephen P. Luby, and Peter Daszak

To determine geographic range for Ebola virus, we tested 276 bats in Bangladesh. Five (3.5%) bats were positive for antibodies against Ebola Zaire and Reston viruses; no virus was detected by PCR. These bats might be a reservoir for Ebola or Ebola-like viruses, and extend the range of filoviruses to mainland Asia.



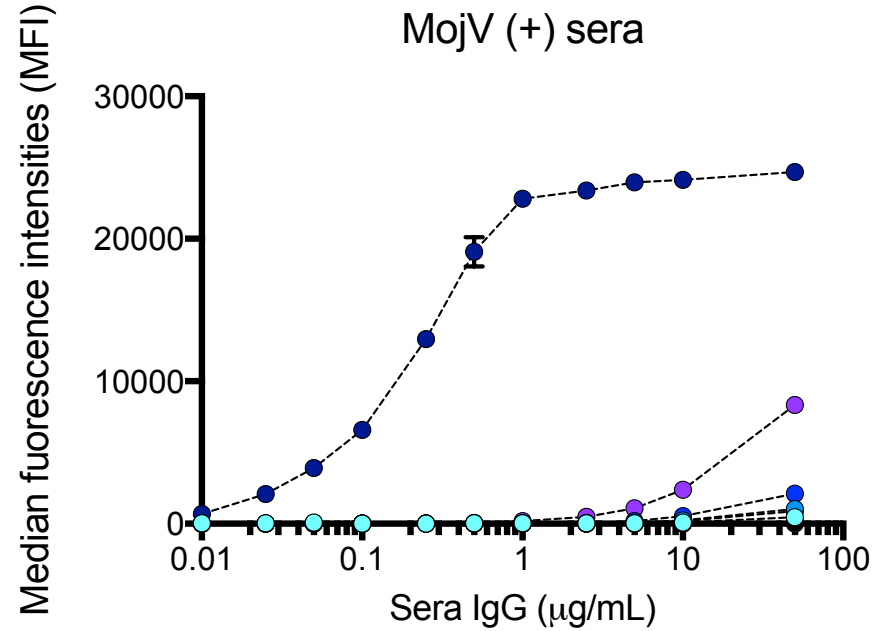
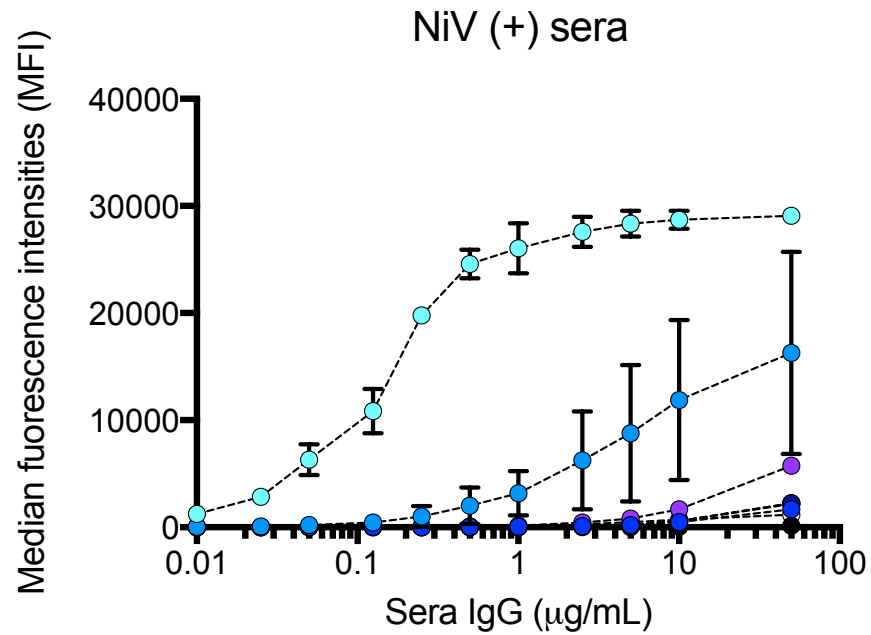
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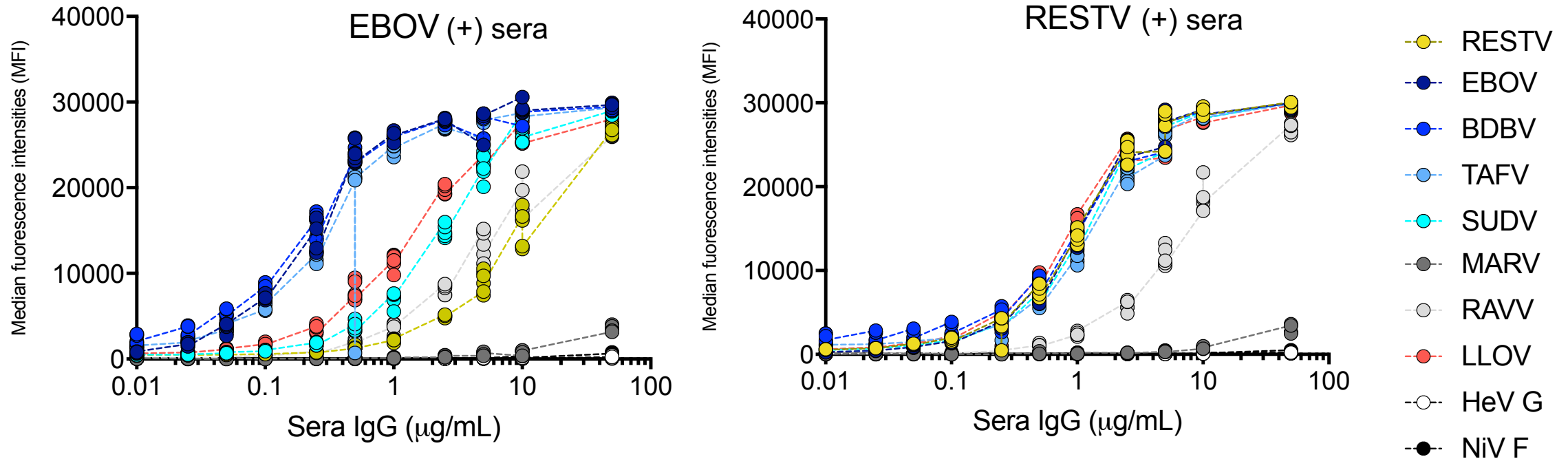


Henipaviruses. Serological Cross-Reactions



- NiV sG
- HeV sG
- CedV sG
- KV sG
- MojV sG
- MENV sHN
- EBOV sGP
- RAVV sGP
- NiV sF

Filoviruses. Serological Cross-Reactions



- **RESTV(+)** sera reacts strongly with heterologous viruses
- **EBOV(+)** sera does not react equally with RESTV GP

RESULTS Filoviruses. Bat sera has antibodies that are cross-reactive with multiple filoviruses

