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**Development of serological screening assays for the detection of antibodies against the most relevant zoonotic viruses in *Eidolon helvum* and *Rousettus aegyptiacus* fruit bats**

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**Background and objectives:** Fruit bats have recently attracted increased interest, as they may act as reservoir species for a variety of highly pathogenic viruses. However, the analysis of their role in certain disease outbreaks is often hampered by the lack of specific diagnostic tools. Therefore, we have developed ELISA assays for the specific detection of IgM and IgG antibodies against the most relevant zoonotic viruses in *Eidolon helvum* and *Rousettus aegyptiacus* fruit bats.

**Materials and methods:** Bats were immunized with recombinant viral proteins (glycoproteins of Hendra virus, Nipah virus and Lagos Bat Lyssavirus, nucleoproteins of Ebola virus and SARS-Coronavirus) to generate positive control sera for serological assays. Besides relevant negative controls, these antigens are used as a basis for ELISA assays. As a conjugate, we used our recently developed monoclonal antibodies specifically raised against IgM or IgG antibodies from *Eidolon helvum* or *Rousettus aegyptiacus*.

**Results:** Using these newly developed sera and specific conjugates, we are now able to reliably detect past infections with these zoonotic viruses in free ranging bats of *Eidolon helvum* or *Rousettus aegyptiacus* bats.

**Conclusion:** These newly generated tools will considerably improve the diagnostic situation for fruit bat samples by enabling the determination of a humoral immune response in animals that may have been in contact with infectious agents.