

Researchers find bat influenza viruses unlikely threaten human health

30 October 2014

Bats seen at Halloween this year may not be quite as scary as they appear – at least when it comes to the spread of specific viruses. A research project conducted in part by a team of researchers in the College of Veterinary Medicine at Kansas State University suggests that influenza viruses carried by bats pose a low risk to humans.

"Bats are natural reservoirs of some of the most deadly zoonotic viruses, including rabies virus, Ebola virus, Henipaviruses and SARS coronavirus," said Wenjun Ma, one of the lead investigators and an assistant professor of virology in the College of Veterinary Medicine's diagnostic medicine and pathobiology department. "Recently, sequences have been discovered in [bats](#) that resemble [influenza viruses](#) that are uncultivable. This made us curious as to whether those viruses exist and what impact that might have on humans."

Ma collaborated on this project with David Wentworth from the J. Craig Venter Institute in Rockville, Maryland, to carry out the research. Their study, "Characterization of Uncultivable Bat Influenza Virus Using a Replicative Synthetic Virus," was published in the Oct. 2 issue of *PLOS Pathogens*.

"The goals of our study were to characterize the bat [influenza virus](#) using noninfectious approaches by synthesizing the complete viral genome, then generate a replicative virus and use it as a model to better understand bat influenza viruses," Ma said.

The team used a variety of techniques, including synthetic technology, reverse genetics, next-generation sequencing and mini-genome polymerase activity assays.

"While our data suggest that the bat influenza viruses are authentic viruses and provide new insights into the evolution and basic biology of influenza viruses, the results also indicate that they

pose little, if any, pandemic threat to humans," Ma said.

More information: Zhou B, Ma J, Liu Q, Bawa B, Wang W, et al. (2014) Characterization of Uncultivable Bat Influenza Virus Using a Replicative Synthetic Virus. *PLoS Pathog* 10(10): e1004420. [DOI: 10.1371/journal.ppat.1004420](https://doi.org/10.1371/journal.ppat.1004420)

Provided by Kansas State University

APA citation: Researchers find bat influenza viruses unlikely threaten human health (2014, October 30) retrieved 11 October 2022 from <https://medicalxpress.com/news/2014-10-influenza-viruses-threaten-human-health.html>

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