

Scientists discover new species of Ebola virus

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Scientists report the discovery of a new species of Ebola virus, provisionally named Bundibugyo ebolavirus, November 21 in the open-access journal *PLoS Pathogens*. The virus, which was responsible for a hemorrhagic fever outbreak in western Uganda in 2007, has been characterized by a team of researchers from the Centers for Disease Control and Prevention in Atlanta, Georgia the Uganda Virus Research Institute; the Uganda Ministry of Health; and Columbia University.

Ebola virus infection in humans causes severe disease for which there is presently no vaccine or other treatment. Case fatalities range historically between 53 and 90%. Therefore, research efforts into the Ebola virus genus and potential diagnostics are ongoing, with the discovery of Bundibugyo ebolavirus representing one of the latest pieces added to this puzzle.

The new virus is genetically distinct from all other known Ebola virus species, differing by more than 30% at the genetic level. More traditional ELISA-based assays detected the new virus; however, the unique nature of this virus created initial challenges for traditional Ebola virus molecular diagnostic assays and genome sequencing approaches. To determine the genetic signature of this new Ebola virus species, scientists used a recently developed random-primed pyro-sequencing approach, quickly determining the genetic sequence of over 70% of the virus genome.

Knowledge of this sequence then allowed for the rapid development of a sensitive molecular detection assay which was deployed to the field as

part of the outbreak response. This draft sequence also allowed for easy completion of the whole genome sequence using a traditional primer walking approach and prompt confirmation that this virus represented a new Ebola virus species.

Current worldwide efforts to design effective diagnostics, antivirals and vaccines will need to take into account the distinct nature of this new member of the Ebola virus genus.

Citation: Towner JS, Sealy TK, Khristova ML, Albarin˜o CG, Conlan S, et al. (2008) Newly Discovered Ebola Virus Associated with Hemorrhagic Fever Outbreak in Uganda. PLoS Pathog 4(11): e1000212. doi:10.1371/journal.ppat.1000212
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