

Ebola virus has mutated less than scientists feared, study finds

March 26 2015



A scanning electron micrograph of Ebola virus budding from a cell (African green monkey kidney epithelial cell line). Credit: NIAID

The Ebola virus is not mutating as quickly as scientists had feared, which is good news for treating the disease and preventing its spread, a study showed Thursday.

Previous research based on limited data had suggested that Ebola was

mutating twice as quickly as in the past, researchers said in the journal *Science*.

But scientists who sequenced four Ebola samples taken in Mali between October and November found no significant genetic changes compared to samples taken at the beginning of the epidemic in March 2014.

"The Ebola [virus](#) in the ongoing West African outbreak appears to be stable—that is, it does not appear to be mutating more rapidly than viruses in previous Ebola outbreaks, and that is reassuring," said Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases (NIAID).

Ebola diagnostic tests, antibodies and [experimental vaccines](#) are based on the genetic make-up of the virus at a particular moment. If too much genetic variation occurs, diagnosis of new, mutated forms might not be possible and vaccines and antibodies could become ineffective.

Mutations could also potentially lead to more severe symptoms or a virus that spreads more easily, the scientists said.

In August, virologists studying 99 [virus genomes](#) from patients in Sierra Leone found a large number of mutations.

But in the study published Thursday, the Ebola samples collected in Mali were found to be similar to those collected elsewhere in the past.

The new data "adds yet more confidence that a vaccine strategy should work," said Jim Kent of the University of California, Santa Cruz, who has set up an Ebola virus genome database.

But a co-author on the earlier Sierra Leone study, Kristian Andersen of the Broad Institute, warned that new treatments and vaccines could result

in virus mutations that will help Ebola survive them.

Ebola has killed more than 10,000 people in west Africa out of nearly 25,000 infected since the start of 2014, mainly in Liberia, Sierra Leone and Guinea.

More information: Mutation rate and genotype variation of Ebola virus from Mali case sequences, *Science*,
[www.sciencemag.org/lookup/doi/ ... 1126/science.aaa5646](http://www.sciencemag.org/lookup/doi/10.1126/science.1256466)

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Citation: Ebola virus has mutated less than scientists feared, study finds (2015, March 26)
retrieved 9 April 2024 from
<https://medicalxpress.com/news/2015-03-ebola-virus-mutated-scientists.html>

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