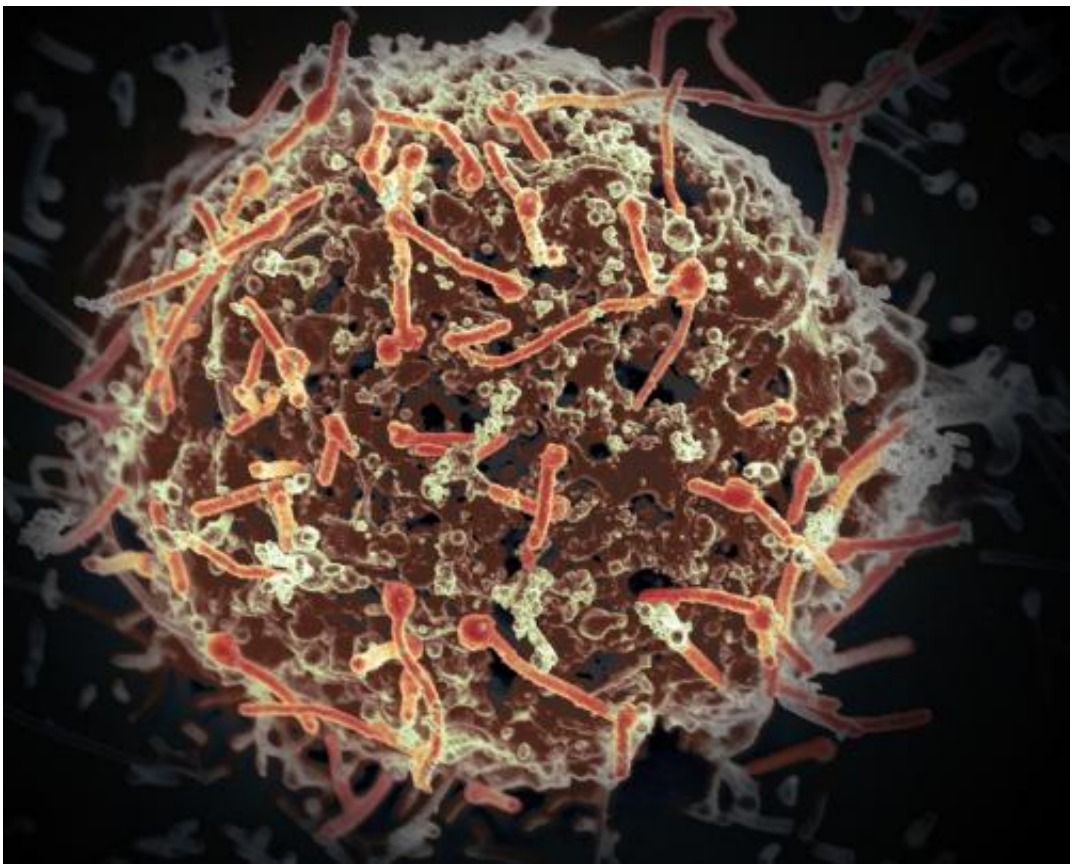
Research shows potential for emergence of new Ebola virus that causes disease in humans

March 24 2016



The Ebola virus, isolated in November 2014 from patient blood samples obtained in Mali. The virus was isolated on Vero cells in a BSL-4 suite at Rocky Mountain Laboratories. Credit: NIAID

New research at the University of Kent has highlighted the potential for the emergence of a new form of Ebolavirus.

A team from the University's School of Biosciences examined the differences between Ebolaviruses that cause severe disease in humans and the Reston virus that does not.

The Reston virus, which is known to circulate in domestic pigs in Asia and occasionally infect humans, is currently the only member of the Ebolavirus family not to have been reported as causing life-threatening disease in humans.

Using computational analysis of the sequences of the genomes of Ebolaviruses and a computational prediction of the effects of sequence variations on virus function, the researchers, Dr Mark Wass, Senior Lecturer in Computational Biology, Professor Martin Michaelis, Professor of Molecular Medicine, and Dr Jeremy Rossman, Lecturer in Virology, and their teams, identified characteristic differences in a number of virus proteins.

The results suggested that only a few changes in one Ebolavirus protein, VP24, may be necessary to render the Reston virus into a virus that can cause human disease. There may be a risk therefore that Reston viruses acquire the few mutations necessary to cause disease in humans and to develop into a novel health threat.

The research, entitled Conserved differences in protein sequence determine the human pathogenicity of Ebolaviruses, is published in *Scientific Reports*.

More information: Morena Pappalardo et al. Conserved differences in protein sequence determine the human pathogenicity of Ebolaviruses, *Scientific Reports* (2016). DOI: 10.1038/srep23743

Provided by University of Kent