**Website address:**
https://www.gesundheitsindustrie-bw.de/en/article/press-release/how-ebola-virus-replicates-cells

# How the Ebola virus replicates in cells

**Like all viruses, the Ebola virus is dependent on host cells in order to replicate. Researchers at Heidelberg University Hospital, in collaboration with colleagues from the Friedrich Loeffler Institute, have been able to show for the first time using state-of-the-art imaging techniques how the replication compartments of the Ebola virus change during replication in infected cells. The research results were recently published online in the renowned journal "Cell".**

The team led by Dr. Petr Chlanda, research group leader at the Medical Faculty of Heidelberg University and researcher in the Department of Virology at the Centre for Infectious Diseases at Heidelberg University Hospital (UKHD), used cryo correlative light and electron microscopy to visualize how the replication centers of the Ebola virus inside infected cells change during the course of the infection. These so-called virus factories are "liquid organelles" that are not enveloped by membranes and in which the virus replicates. The study revealed that these compartments mature during infection and lose their liquid state in the process. 3D images taken using cryo-electron tomography show that the virus factories initially consist exclusively of loosely packed spiral structures containing the viral genome. These then mature into highly organized parallel bundles via a compact cylindrical shape.

The team was thus able to demonstrate that these structural and physical changes control key steps of the virus infection, such as the replication of the genetic material, the assembly of the virus and its release. Knowledge of these restructuring processes could potentially lead to new approaches for antiviral therapy in the future. The current research results have been published online in the journal "Cell". First author and corresponding author is Dr. Melina Vallbracht, virologist and postdoctoral researcher in the Department of Virology at the Center for Infectiology at the UKHD. The Friedrich-Loeffler-Institute is located on the island of Riems, which belongs to the city of Greifswald.

**Press release**

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Source: Heidelberg University Hospital

**Further information**

- Heidelberg University Hospital