Chikungunya virus shuts down infected cells

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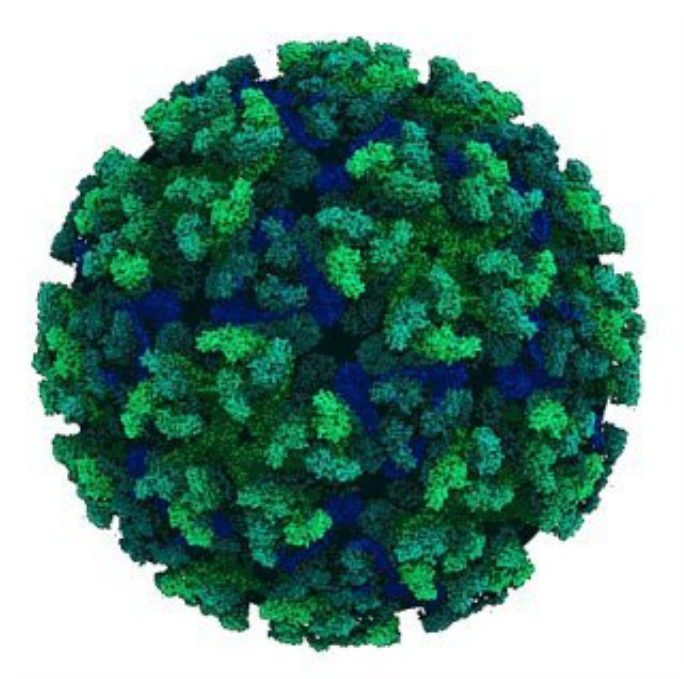

Researchers from Wageningen University, part of Wageningen UR, in collaboration with colleagues from Leiden University and a research team in Australia, have revealed how chikungunya virus blocks essential processes in infected cells that normally would keep the virus under control.

Jelke Fros, a PhD student of the Laboratory of Virology in Wageningen, has discovered that the viral protein nsP2 blocks these processes by

shutting down cellular RNA and protein production. This finding is important to explain the clinical symptoms of this disease and suggests that nsP2 can be an important target for the design of antiviral therapies. The results have been published in the *Journal of General Virology.*

Chikungunya virus - a new Pirate of the Caribbean

A large-scale chikungunya virus epidemic is ongoing in the Caribbean since December 2013. The virus is transmitted to humans via the bite of an infected mosquito. Human infection leads to high fever, rash and excruciating joint pains that may last for several months or years. There is no current vaccine or treatment for this debilitating disease.

Vaccine

Wageningen University previously developed a chikungunya virus-like particle (VLP) vaccine that protects animals from virus infection and associated disease symptoms. After several successful vaccination studies in mice, the efficacy of the prototype vaccine is currently being tested in non-human primates, in a collaboration with Top Institute Pharma and the Erasmus Medical Center. After completion of these important preclinical studies, the VLP vaccine may be further developed to enter clinical trials in humans.

More information: "Chikungunya virus nsP2-mediated host shut-off disables the unfolded protein response" *J Gen Virol* vir.0.071845-0; published ahead of print November 13, 2014, DOI: 10.1099/vir.0.071845-0

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