SFB 900

SFB 900 Seminar Series

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TITLE

Reconstruction of arbovirus replicase complexes: proteins, RNAs and host factors

SPEAKER

Prof. Andres Merits, Institute of Technology, University of Tartu, Estonia

LOCATION

Lecture Hall R, building J06, MHH, Carl-Neuberg-Str.1 Hannover

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5.00 PM (s.t.)

» Research of Andres Merits

Alphaviruses are emerging human pathogens. They have positive-strand RNA genome and are transmitted by arthropod vectors. In our research group we use Semliki Forest virus (SFV) and Sindbis virus (SINV) as none-pathogenic model viruses and Chikungunya virus (CHIKV) as representative of alphaviruses pathogenic to humans. Alphavirus infection is generally cytotoxic for vertebrate cells and non-cytotoxic (persistent) in invertebrate cells.

Alphaviruse replicase precursor represents a non-structural (ns) polyprotein(s), translated directly from incoming genomic RNA. It is subsequently processed by viral protease which generates first processing intermediates and finally fully processed ns-proteins, nsP1-nsP4. All these components and their assemblies are important for the virus infection. nsP-s of alphaviruses are multifunctional enzymes and have also number of essential non-enzymatic activities. In infected cells part of nsPs co-localize with each other in membrane-bound replicase complexes termed spherules.

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