
Workshop Rodent-Borne Diseases

The role of rodents in tick-borne viral diseases with special emphasis on tick-borne encephalitis

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Tick-borne viruses are principally transmitted by ticks. However, beside ticks vertebrates play an important role for most tick-borne pathogens as reservoir hosts or as amplifying hosts. Tick-borne encephalitis (TBE) is the most important viral tick-borne disease in Eurasia. The tick-borne encephalitis virus circulates between ticks and several rodent species seem to play an important role as amplifying hosts. Rodents, mainly the bank vole (*Myodes glareolus*) and field mice (*Apodemus* spp.) play an important role for the amplification and sustaining of the natural transmission cycle. There is increasing evidence that TBE virus can be found in the brains of small rodents during winter time which let us hypothesize that the viral neurotropism of TBE virus in humans might be an erroneous ecological hibernating mechanism of TBE virus in a wrong host. The effect and impact of the amplifying host species on the pathogenicity of TBE virus remains to be clarified. Besides this, there is increasing evidence for a major role of rodents for the genetic stability of TBE virus. Multiple passages of TBE virus exclusively in ticks seem to degenerate the viral genome and cause extinction of the virus transmission cycle. These examples show that rodents beside a specific role as amplifying and reservoir hosts may play a more complex role in the viral natural maintenance cycle of tick-borne viruses.

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Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



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