

Host-species barriers affecting LASV infection in *M. natalensis*

Wednesday, 11 October 2023 13:00 (15 minutes)

Lassa virus (LASV) is a hemorrhagic fever-causing Arenavirus endemic in Western Africa. Up to 5000 deaths per year are attributed to infections with this rodent-borne pathogen.

The main rodent reservoir is the multimammate mouse *Mastomys natalensis* a commensal rodent found throughout Sub-Saharan Africa. However, in recent years several other rodent species have been identified as additional reservoir hosts. In this study we assessed the ability of several LASV strains originating from other rodent reservoirs to establish infection in *M. natalensis*.

Mastomys natalensis were infected with various LASV strains using different infectious doses. Animals were followed for up to eight weeks post-infection and blood, organs and urine were sampled at frequent intervals. Furthermore, naïve animals were co-housed with inoculated individuals to assess natural transmission.

We previously described long term persistence of LASV isolated from *M. natalensis* in its natural rodent host. Similarly, a LASV strain isolated from the closely related *M. erythroleucus* is also capable of establishing persistent infections in *M. natalensis* and is readily transmitted to exposed individuals. In contrast, LASV strains originating from non-Mastomys rodents only caused transient infections followed by seroconversion. Furthermore, these strains showed no or only limited transmission between infected animals and their contacts.

Keywords

Lassa virus, Mastomys natalensis, Host-species barriers

Registration-ID code

ZOO23-565

Professional Status of the Speaker

Postdoc

Junior Scientist Status

Yes, I am a Junior Scientist.

Primary author: Dr HOFFMANN, Chris (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany)

Co-authors: PALLASCH, Elisa (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany; German Center for Infection Research (DZIF), Partner site Hamburg, Germany); BOCKHOLT, Sabrina (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany); WURR, Stephanie (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany); BRINKMANN, Nele (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany); MÜLLER, Jonas (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany); Dr UNRAU, Ludmilla (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany); Dr OLAYEMI, Ayodeji (Natural History Museum, Obafemi Awolowo University, Ile Ife HO220005, Nigeria); Dr FICHET-CALVET, Elisabeth (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany); Prof. GÜNTHER, Stephan (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany; German Center for Infection Research (DZIF), Partner site Hamburg, Germany); Dr OESTEREICH, Lisa (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany; German Center for Infection Research (DZIF), Partner site Hamburg, Germany)

Presenter: Dr HOFFMANN, Chris (Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany)

Session Classification: Session 12: Zoonoses & Wildlife II

Track Classification: Zoonoses & Wildlife