



Contribution ID: 237

Type: Oral presentation

## A novel astrovirus isolated from a greater white-toothed shrew

*Monday, October 13, 2025 2:45 PM (15 minutes)*

Astroviruses are one of the major causative agents of non-bacterial gastroenteritis in children under the age of five. The number of astroviruses detected in different host species is increasing, but virus isolation remains rare, which limits subsequent investigations. In the present study, a novel astrovirus was isolated from a greater white-toothed shrew (*Crocidura russula*, family Soricidae), tentatively named CrussAstV.

Whole genome sequences of the virus isolate and of a *C. russula* were determined, and a close phylogenetic relationship to Jingmen shrew astrovirus 1, detected in Shantung white-toothed shrews, was demonstrated. Electron microscopy investigations confirmed the presence of virions with a star shaped morphology. The highest CrussAstV-RNA loads were detected in kidney tissue, which may indicate a potential transmission route via urine. Ongoing environmental and non invasive urine sampling of the *C. russula* colony, from which the original animal came from, has so far yielded negative results through RT-qPCR testing. Kidney samples from 24% of screened *C. russula* (n=243) carried CrussAstV-RNA, but none of 39 lesser white toothed shrews or 93 bicolored white-toothed shrews, even when trapped at the site of a positive *C. russula*.

In a One Health approach, future studies should evaluate the influence of anthropogenic land use and climate change on the range of these reservoir species to further assess the risk of spill over infections to other host species.

### Keywords

shrew, virus isolation, astrovirus

### Registration ID

OHS25-78

### Professional Status of the Speaker

Postdoc

### Junior Scientist Status

Yes, I am a Junior Scientist.

**Author:** HARING, Viola

**Co-authors:** RUBBENSTROTH, Dennis (Friedrich-Loeffler-Institut, Institute of Diagnostic Virology, Greifswald - Insel Riems, Germany); JACOB, Jens (Julius Kühn-Institute, Institute for Epidemiology and Pathogen Diagnostics, Rodent Research, Münster, Germany); FRANZKE, Kati (Friedrich-Loeffler-Institut, Institute of Infectology, Greifswald - Insel Riems, Germany); HÖPER, Dirk (Friedrich-Loeffler-Institut, Institute of Diagnostic Virology, Greifswald - Insel Riems, Germany); ULRICH, Rainer G. (Friedrich-Loeffler-Institut, Institute of Novel and Emerging Infectious Diseases, Greifswald - Insel Riems, Germany); BEER, Martin (Friedrich-Loeffler-Institut, Institute of Diagnostic Virology, Greifswald - Insel Riems, Germany); PFAFF, Florian (Friedrich-Loeffler-Institut, Institute of

Diagnostic Virology, Greifswald - Insel Riems, Germany); DIEDERICH, Sandra (Friedrich-Loeffler-Institut, Institute of Novel and Emerging Infectious Diseases, Greifswald - Insel Riems, Germany)

**Presenter:** HARING, Viola

**Session Classification:** Session 2: Emerging Pathogens I

**Track Classification:** Emerging Pathogens