Contribution ID: **4**   Type: **Oral presentation**

Superinfection exclusion and enhancement of infection in pestiviruses

Thursday 11 September 2025 16:00 (15 minutes)

Some viruses can suppress superinfections of their host cells by related or different virus species. The phenomenon of superinfection exclusion can be caused by inhibiting virus attachment, receptor binding and entry, by replication interference, or competition for host cell resources. Blocking attachment and entry not only prevents unproductive double infections but also stops newly produced virions from re-entering the cell post-exocytosis. In this study, we investigated the exclusion of superinfections between the different pestivirus species. Bovine and porcine cells pre-infected with non-cytopathogenic pestivirus strains were evaluated for susceptibility to subsequent superinfection using comparative titrations. Our findings revealed significant variation in exclusion potency depending on the virus species as well as the host cells. Despite this variability, all tested classical pestivirus species reduced host cell susceptibility to subsequent infections, indicating a conserved entry mechanism. Unexpectedly, pre-infection with atypical porcine pestivirus (APPV) increased host cell susceptibility to classical pestiviruses. These results indicate that APPV uses different binding and entry mechanisms than the other pestiviruses. The observed increase in susceptibility of cells post-APPV infection warrants further investigation and could aid challenging isolations from diagnostic samples.

Keywords

Superinfection exclusion, pestivirus, CSFV, APPV

Registration ID

12

Professional Status of the submitter, who is also the speaker

Professor

Authors: Ms CECHINI, Angelika (JLU Giessen); Dr REUSCHER, Carina (JLU Giessen); Prof. RIEDEL, Christiane (Universität Lyon); Dr GERANIO, Francesco (Universität Marburg); Dr BARTH, Sandra (JLU Giessen); Mr AFFELDT, Sebastian (JLU Giessen); Prof. RÜMENAPF, Till (Vetmeduni Vienna); LAMP, Benjamin (JLU Gießen)

Presenter: LAMP, Benjamin (JLU Gießen)

Session Classification: Viral Pathogenicity I

Track Classification: Veterinary Bacteriology, Mycology and Virology