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**Editors-in-Chief**  
*Journal of Virology*

Dear Drs. Felicia Goodrum and Stacey Schultz-Cherry,

Herewith, we would like to submit our manuscript entitled “**Quantifying the zoonotic risk profile of European influenza A viruses in swine from 2010 to 2020 inclusive”** for consideration for publication in the Journal of Virology as a research article.

In this manuscript, we quantified the pandemic potential of European swine H1 strains by testing selected viruses against human cohort sera. These data showed variable recognition of human sera to different H1 virus lineages and limited population cross-protection. We also quantify the evolution of H1 and H3 viruses in European swine between 2010 and 2020 and demonstrate significant genetic diversity with complex spatial patterns. From these data, we objectively selected representative viruses for antigenic characterisation in ferret and swine model systems to determine zoonotic risk. We measured the antigenic distance between selected swine viruses and available Candidate Vaccine Viruses for pre-pandemic preparedness; and determined the antigenic distances between currently used swine vaccines and the representative swine viruses. We also compared the breadth of the innate immune response between the swine and ferret models.

We highlight how genetic evolution in swine results in a spectrum of antigenic diversity that likely mediates zoonotic risk. Our data demonstrate the importance of matching swine influenza vaccine seed strains to contemporary circulating viruses and highlight how vaccine mismatch may drive additional antigenic evolution and demonstrate the need for constant monitoring and surveillance of swine viruses for the benefit of both animal and global health. These findings can be used to inform and prioritise future pre-pandemic preparedness efforts.

The manuscript has been approved by all authors and the data and the manuscript has not been reported previously elsewhere. All authors contributed significantly to this work and approve of it’s submission to your journal. We would be grateful for your consideration and look forward to any feedback you may have.

With kind regards, on behalf of all authors,  
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