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**Editor-in-Chief**  
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Dear **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”** by Amelia Coggon et al. for consideration for publication in the Journal of Virology as a research article.

In this manuscript, we explore the genetic evolution of H1 and H3 viruses in European swine throughout the decade of 2010 to quantify an observed increase in genetic diversity with complex spatial patterns. Given the number of zoonotic H1 variant detections in Europe, we triage and select viruses of interest for antigenic characterisation in the ferret and swine models. Firstly, this is to determine the antigenic distances between selected viruses and available Candidate Vaccine Viruses for pre-pandemic preparedness; secondly, to compare the breadth of the innate immune response between the two models; and thirdly, to determine the antigenic distances between currently used swine vaccine seed strains and selected viruses.

We highlight the antigenic evolution of the 1A.3.3.2 and 1C-lineage viruses, the importance of matching swine influenza vaccine seed strains to contemporary circulating viruses within target-host populations, and the potential impact this may have on antigenic evolution if not undertaken. Finally, to quantify the pandemic potential of European H1 strains, we tested selected viruses against human cohort sera, demonstrating the variable recognition of human sera to different H1 virus lineages and the limited population cross-protection. Our results demonstrate the need for constant monitoring and surveillance of zoonotic 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,  
Amelia Coggon, iBSc, BSc, MRes  
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