

SWINE HEALTH

Title: PRRSV Modulation of the Porcine Antibody Repertoire - **NPB ID #: 10-139**

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Scientific Abstract:

Extensive efforts have been directed to characterize the antibody and neutralizing antibody responses to PRRSV infection, in the hope of elucidating key insights into protective and cross-protective immunity. The main hurdle to overcome in obtaining these answers is knowledge of the antibody molecules that pigs express, and how PRRSV infection modulates this population. Here, we characterized the Ig heavy chain (HC) repertoire of the pig and discovered major alterations in diversity due to PRRSV infection. We also sequenced the genomic Ig light chain (LC) loci to identify variable (V) and joining (J) gene segments that encode LC antigen binding. This information is essential to construct antigen binding libraries and identify PRRSV-specific antibodies. We expect the results of this research to open the door to development of therapeutic reagents to treat acute PRRS, genetic testing for PRRS resistance, and a mechanistic understanding of cross-protective immunity.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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