

SWINE HEALTH

Title: Molecular Structures of PRRSV that Contribute to PRRSV Protective Immunity
NPB: # 09-248

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Scientific Abstract:

One of the objectives of the proposal is to delineate the regions of the two glycoproteins (GP2 and GP4) of PRRSV that interact with CD163. Other objectives of the proposal are to generate antibodies to these small regions of the glycoproteins as well as to the full-length proteins for future studies to determine if any of these antibodies possess PRRSV neutralizing activity.

To carry out the studies in the proposed objectives, we generated a series of mutants of GP2 as well as GP4 proteins in which various regions were specifically removed by manipulating the plasmids encoding these proteins. We then examined these proteins for their ability to interact with CD163 to ascertain the regions important for such interactions. Our results identified the regions of GP2 and GP4 that appear to interact with CD163. Furthermore, we generated recombinant baculoviruses that expressed these viral GPs. The viral proteins were purified from the cells and have been used to generate antibodies. Further studies will be conducted to characterize these antibodies in the future. Part of our studies supported by the NPB grant (#09-248) has been recently published in *Virology* (Das et al., *Virology*, 410: 385-394, 2011; a copy of the paper has also been forwarded to B. L. Everitt).

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 This report has not been peer-reviewed.

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