

## SWINE HEALTH

**Title:** Development of an indirect ELISA to diagnose SIV using antibodies against the viral matrix protein - **NPB #03-036**

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### Abstract:

The objective of this study was to establish an indirect ELISA that can be used to detect exposure to all swine influenza virus (SIV) subtypes by detecting antibodies against conserved SIV matrix proteins. A second objective was to determine if this assay can also be used to differentiate SIV infection from vaccination. Serum from SIV-vaccinated and/or SIV-experimentally infected pigs were used as antibody positive serum and serum from naive pigs was used for negative controls. Recombinant matrix proteins M1 and M2 proteins (rM1 and rM2) were produced using a baculovirus expression system, an insect cell system that produces high levels of proteins. The rM1 and rM2 proteins were semi-purified by ultracentrifugation and verified using dot blot and western blot assays using monoclonal anti-influenza M1 and M2 antibodies. The presence of antibodies to rM1 and rM2 proteins in serum from pigs vaccinated and/or infected with SIV was detected by immunoblot analysis. Differences in the intensity of the bands detecting antibodies to the M1 and M2 proteins suggest that the level of anti-M1 and M2 antibodies varied depending on the type of SIV exposure. Anti-M2 antibodies were consistently detected in pigs which had been experimentally infected with different SIV subtypes. These results suggest that anti-M2 antibodies can be utilized to detect exposure by the pigs to all SIV subtypes tested to date.

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