

SWINE HEALTH

Title: Sub-typing of PRRSV isolates by means of measurement of cross-neutralization reactions
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Abstract:

The degree of similitude or closeness between two different isolates or strains of PRRSV is very important for deciding which strains should be used for immunization, by either vaccinating with commercial vaccines or attempting to stabilize a herd with planned wt PRRSV infection. As previously known for certain important viral diseases, such as in Foot and Mouth Disease, the reciprocal (cross-) neutralization titers between two strains may be of utmost importance to establish the degree of similarity or difference between these. There is currently a void of methods that would allow distinguishing or grouping strains of PRRSV in a manner that would appropriately reflect immunogenic relatedness and cross protection. Such approach would be a better way of grouping or subtyping isolates than the mere comparison of genetic sequences used nowadays. In this project, the generation of master reference hyperimmune swine antisera against certain selected reference strains of PRRSV allowed us grouping PRRSV strains in some distinct clusters and making inferences about their cross-reactivity and cross-protection by cross-neutralization. These experiments indicate that a high degree of complexity exists in the reciprocal neutralization among strains, suggesting that an increase of the battery of reference serums may be required in order to achieve a complete typing of the universe of PRRSV strains circulating in the U.S. Most importantly, these experiments have provided evidence of the occurrence of unexpected cross-reactivity between otherwise distinct types of PRRSV, thus indicating either the existence of groups of strains of highly atypical (yet undefined) reactivity, or the existence of strains that may emerge from recombination between the two main types of PRRSV.

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