RESEARCH ABSTRACT

SWINE HEALTH

Title: Identification of conserved T-cell epitopes contained in the non-structural genes of PRRSV which contribute to broad protective immunity – **NPB #10-115**

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Scientific Abstract:

Porcine reproductive and respiratory syndrome virus (PRRSV) is a significant swine pathogen which exhibits considerable sequence diversity. In an attempt to identify highly conserved T-cell epitopes contained in proteins of this virus, we examined heptadecamer peptides spanning the sequence of the PRRSV nonstructural proteins (NSPs) 9 and 10, both of which are highly conserved, for their ability to elicit a recall proliferative and interferon-gamma response in peripheral blood mononuclear cells obtained from pigs immunized against the type-II PRRSV strain FL-12. These studies led to the identification of four peptides, two from each NSP9 and NSP10 that appear to contain T-cell epitopes. Comparison of the amino acid sequence of these four peptide sequences to the analogous sequences from a diverse sample of type-II PRRSV strains indicated that these sequences are highly conserved and thus contain highly conserved T-cell epitopes. The identified epitopes may be important in the formulation of immunogens to provide broad cross-protection against diverse PRRSV strains.