

RESEARCH ABSTRACT



SWINE HEALTH

Title: Effect of repeated PRRSV vaccination on lymphocyte response in sows
NPB #99-149

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Date Received: 4/17/2001

Abstract:

The objective of this study was to investigate the effect on the immune system of long term exposure of sows to PRRSV from repeated vaccination with either modified live virus (MLV) or killed PRRSV vaccines. Serology and the response of specific populations of lymphocytes from peripheral blood to PRRSV antigens specific for each vaccine was measured. The study utilized cull sows obtained from PRRSV positive farms with a history of multiple vaccinations with one of the two vaccines and a PRRSV negative herd. Differences in antibody recall ability were detected between the two vaccine regimens by measuring serum antibody levels with both a commercial ELISA assay and a serum neutralization assay. The sows repeatedly vaccinated with the MLV vaccine failed to produce a recall antibody response upon re-vaccination with the MLV vaccine. Sows previously vaccinated with the killed vaccine demonstrated a slight increase in serum neutralizing antibodies only following vaccination with the MLV vaccine. In contrast, sows which received the killed vaccine and were boosted with the killed PRRSV vaccine demonstrated an increase in both types of antibodies. Statistical analysis of the lymphocyte proliferation assays is still underway. However, preliminary results suggest that the B cell response closely matches the antibody response. In addition, B cell proliferation appeared to occur independent of PRRSV strain used for stimulation. Preliminary analysis found that B lymphocytes from sows receiving the killed vaccine proliferated more than lymphocytes from sows repeatedly vaccinated with the MLV vaccine in response to revaccination. This study suggests that more information on the immune response induced by wild-type virus and repeated vaccination with a MLV vaccine is needed. The preliminary data in this study suggests that repeated MLV PRRSV vaccination does not booster the immune response. However, challenge studies are required to determine the ability of a vaccine to induce protection against clinical disease.

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 This report has not been peer reviewed

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