

SWINE HEALTH

Title “Live-animal assay for identifying correlates of protection/cross-protection for intranasal swine influenza virus vaccines” – **NPB #13-122**

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Scientific Abstract:

Introduction

Stated Objectives from original proposal

The **primary objective** of this research is to optimize and validate a live-animal assay that provides a predictive measure of protection to heterologous influenza A virus (IAV) infection following intranasal vaccination with live-attenuated influenza virus (LAIV) or replication-defective virus (RDV) encoding IAV genes. Inactivated IAV vaccines do not provide adequate cross-protection against the large and diverse pool of IAV currently circulating in the North American pig population. Published research indicates that LAIV and RDV vaccines delivered by the intranasal route provide protection against diverse IAV, a key feature of their anticipated market availability and applicability. However, what’s lacking in this approach is a way to measure the immune response in a sample collected from a live-animal to predict cross-protection.:

- **Objective 1:** Evaluate cross-reactive cellular and mucosal antibody elicited following intranasal LAIV and RDV vaccination using samples from live animals.
- **Objective 2:** Determine if the quantitative measure of cross-reactivity (mucosal antibody and/or cellular IFN- γ production) correlates with cross-protection in a vaccination/challenge experiment.

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 This report has not been peer-reviewed.

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