

Title: PRRSV infection of pig macrophages - NPB #06-130

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Scientific Abstract: With the assistance of funding from this small grant, PRRSV replication was studied in primary porcine alveolar macrophages (PAMs), under varying experimental conditions and in comparison with PRRSV infection of the standard MARC-145 cells used in many previous studies. Key findings to emerge were: 1. PRRSV replication in PAMs followed a distinct time-course, with limited spread and recovery in many cell cultures within 2 days post-infection. The PAM response to PRRSV is quite different from the cytopathic MARC-145 cell response to PRRSV infection; 2. PRRSV infection of PAMs was highly sensitive to combination low-dose treatment with antiviral cytokines (IFN-gamma or AK-2) and antiviral quinolone drugs. Consistent with the observation that PAMs obtained from different pigs vary in their PRRSV-permissiveness, the results demonstrate that PAMs may spontaneously elaborate, or acquire through drug treatment, resistance to PRRSV infection. Additional research in the area of drug-mediated regulation of PRRSV permissiveness is needed to fully explore the significance of these observations.

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