



Porcine reproductive and respiratory syndrome virus (PRRSV) natural seeder model

Porcine Respiratory and Reproductive Syndrome (PRRS), caused by the PRRS virus (PRRSV) is a disease which has a significant impact on the global pig industry. To facilitate the efficacy testing of novel vaccines and therapeutics to prevent and treat the disease we have developed and validated a natural seeder experimental challenge model for PRRSV.

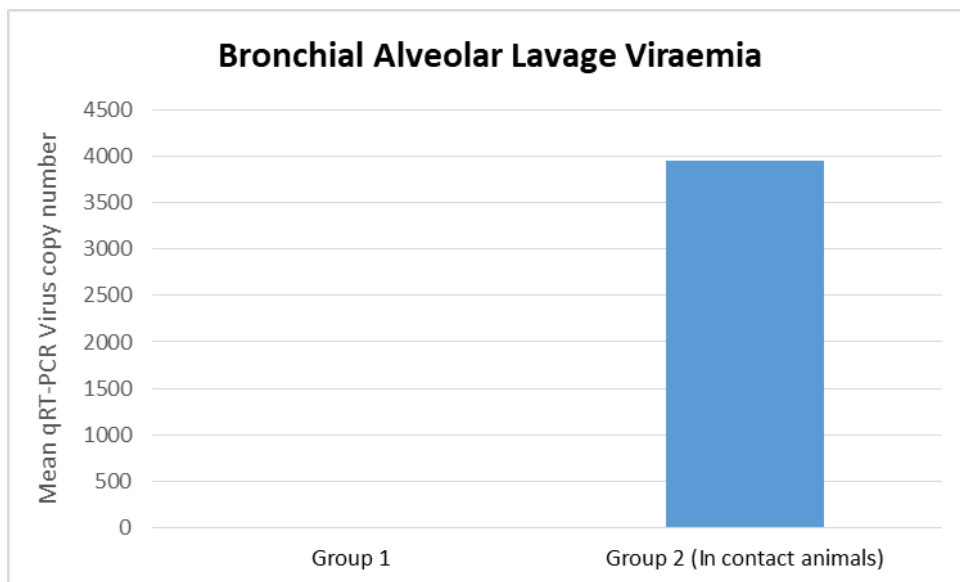
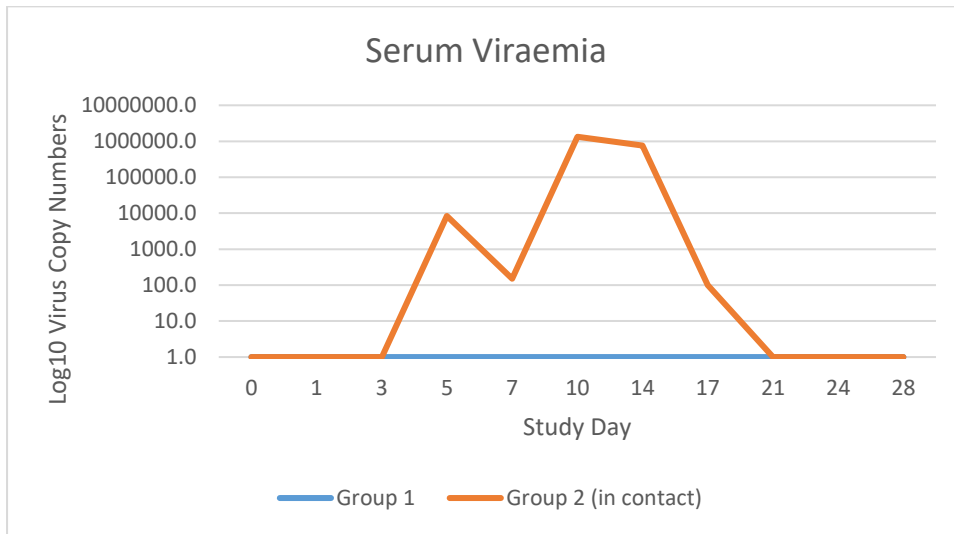
In the model a small number of pigs (n=6) are infected with PRRSV and are then mixed with naïve piglets (n=10). Transmission of the virus to the naïve animals occurs through direct and indirect contact between the seeders and the naïve animals and mimics the natural transmission that would occur in the field. The model can be used to assess the efficacy of test products in preventing or reducing the spread of infection to naïve animals from infected ones.

In a validation study 22 piglets of 3-4 weeks of age were divided into 2 groups (one of six and the other of 16). On Day 1, 6 animals from Group 2 were challenged by the intranasal route with 5ml of a PRRSV Serotype 1 subtype 2 suspension (seeder pigs). The six animals from Group 1 and the remaining ten animals from Group 2 (in contact) were not challenged.

Clinical observations, were carried out daily from Day -2 to Day 28. Blood samples were collected throughout the study.

On Day 14, all seeder animals from Group 2 were euthanized and the lungs were removed, weighed and scored before bronchiolalveolar lavage samples were collected. The tracheobronchial lymph nodes were also removed and weighed. On Day 28 all remaining animals were weighed then euthanased. Scoring and sampling was carried out as above.

Results showed that challenge of seeder pigs with PRRSV resulted in all of the naïve in contact pigs being confirmed as PCR positive for serum viraemia by 14 days exposure (see below). No animals in the control group (Group 1) had a positive PCR for serum viraemia. All in contact animals were also confirmed as PCR positive from bronchial alveolar lavage samples collected at necropsy.



The model is available for use in contract studies at Moredun Scientific, please contact us for further details info@moredun-scientific.com

