# 豬場飼養安全及豬隻特定疾病抗體的調查

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## 摘要

本研究計畫基於降低疾病的風險必須著重預防與立即性的診斷與防治的精神。配合每一養豬場的防疫需求，提供客製化的診斷方式，利用先進免疫及分生技術，快速正確提供有效防疫措施，建立飼養安全。本計畫血清抗體樣本檢測共1492例(28場次)，包含：豬假性狂犬病(PR) 抗體檢測1492例，豬生殖與呼吸綜合症(PRRS) 抗體檢測308件，豬環狀病毒第二型(PCV2) 抗體檢測308件，豬瘟(HC) 抗體檢測308件，及豬流行性下痢病毒(PED)抗體檢測26件。在PCR檢測病毒病原共42場次，豬輪狀病毒檢出1場，PCV2檢出7場，PRRS檢出12場，及豬流行性下痢病毒檢出16場為最多。本計畫為更清晰分析豬場的特定抗體的分布情形，除了使用傳統中和抗體力價檢測技術外，並購置市售商品化檢測套組進行特定抗體的檢測，也利用分子生物技術生產重組蛋白做成抗體ELISA檢測用的抗原。這些方式能檢測更多的特定抗體，能測定免疫計畫與疾病的免疫反應。此外利用客製化的診斷服務及制式化採血週齡，可有效分析病原及觀察豬群抗體力價分布曲線，並由各週齡豬隻的特定抗體力價的判定，評估特定疾病的風險或該場疫苗施打後的免疫效力評估，推算疫苗施打的最佳週齡。

# Investigation of swine health on pig farms through the effective monitoring of porcine diseases and immunological response to vaccination

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**Abstract**

This study is ultimately focused on reducing the risk of swine disease with an emphasis on prevention, diagnosis, and treatment. According to each pig farm's epidemic prevention needs, we provided customized diagnostic tools to establish secure rearing practices, including the use of advanced immunization, molecular diagnostic methods, and the rapid provision of effective epidemic prevention measures. A total of 1492 serum samples (28 batches) tested positive for viral antibodies in this study, including 1492 samples for porcine pseudorabies (PR), 308 samples for porcine reproductive and respiratory virus (PRRSV), 308 samples for porcine circovirus type 2 (PCV2), 308 samples for hog cholera (HC), and 26 samples for porcine epidemic diarrhea virus (PEDV). Furthermore 42 samples tested positive for viral infection using standard PCR screenings. We detected one positive sample for coronavirus, 7 positive samples for PCV2, 12 positive samples for PRRS, and 16 positive samples for PEDV. In addition to using serum neutralizing antibody tests, this program also utilized commercially available kits for the detection of specific antibodies. Moreover, we used molecular biotechnology methods to produce recombinant proteins for coating antigens for ELISA. These methods enabled us to detect more specific antibodies in order to more precisely immune response to the various vaccination programs. In addition, the use of customized diagnostic services and standard blood collection efforts can be an effective monitor of infection as well as provide an effective observation of antibody titer distribution curves. The optimal age of inoculation was estimated by assessing the risk of a specific disease or the immune response after vaccination.