建立同步檢測非洲豬瘟病毒與豬瘟病毒核酸技術

新興傳染病組

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摘要

豬瘟和非洲豬瘟是影響全球養豬業的兩種非常重要的疾病。由於這些疾病在亞洲地區流行，且這兩種疾病的傳播速度、臨床症狀和肉眼病變的相似性，需針對此兩疾病進行快速與精確的區別診斷，以因應防疫需求。面對非洲豬瘟入侵威脅不斷升級，臺灣撲滅豬瘟的關鍵期，因此必須採取積極措施。本研究比較3組已在國際期刊發表的引子和探針，以找出檢測這兩種疾病的合適工具。以國內檢出之豬瘟與非洲豬瘟陽性(動物實驗檢體與肉製品)及陰性核酸樣本進行敏感性和特異性測試，並與農業部公告的標準方法比較分析顯示，同步檢測技術對非洲豬瘟的敏感性和特異性達到100%，對豬瘟的敏感性和特異性達到95.8%和100%。本研究之完成，提供一種快速、準確、方便的方法來同時檢測豬瘟與非洲豬瘟抗原。

Establishment of technology for the simultaneous detection of nucleic acids of African and classic swine fever viruses

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Abstract

African swine fever (ASF) and classical swine fever (CSF) are two highly significant diseases affecting the global swine industry. Due to the prevalence of these diseases in the Asian region and their similarities in transmission speed, clinical symptoms, and macroscopic lesions, there is a need for rapid and accurate diagnostic methods to distinguish between the two diseases. Faced to the escalating threat of African swine fever invasion, there is a continuous need for Taiwan to take proactive measures. In addition, it was in the critical period of eradicating classical swine fever, as there is a possibility of its resurgence. This study compared three sets of primers and probes which have been published in international journals to identify suitable tools for detecting these two diseases. Sensitivity and specificity tests were conducted using domestically detected positive samples for classical swine fever and African swine fever (including animal experiment specimens and meat products), as well as negative nucleic acid samples. Comparative analysis with the standard methods announced by the Ministry of Agriculture indicated that the simultaneous detection technology achieved a sensitivity and specificity of 100% for African swine fever and 95.8% and 100% for classical swine fever. This study provides a rapid, accurate, and convenient method for simultaneously detecting antigens of classical swine fever and African swine fever.