

豬矽尼卡病毒中和抗體盛行率調查與分析

新興傳染病組

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摘要

矽尼卡病毒 A (Senecavirus A; SVA), 舊名為矽尼卡谷病毒 (Seneca valley virus), 為 Picornaviridae 病毒科的單股正鏈 RNA 病毒。SVA 在 2002 年於細胞培養污染中首度被發現, 2015 年於美國商業豬群檢出, 其後陸續於加拿大、巴西、中國大陸、哥倫比亞與泰國等國家發生疫情。SVA 感染與其他水疱性疾病相同, 是傳染性很強的病毒性疾病, 目前沒有疫苗可供使用, 在口蹄疫等其他口蹄疫樣病毒流行地區, SVA 的存在也使得診斷和監測更具挑戰性。而本所針對國內豬隻進行 SVA 中和抗體的調查, 並透過與臺灣大學獸醫專業學院合作, 針對 2021 年的前測結果與 2022 年檢測結果進行風險因子分析。分析結果顯示, 豬場周邊是否有其他豬場、豬場是否進行配種行為、餵食廚餘、由外場員工抓豬及豬場內有自然配種是豬場出現 SVA 中和抗體的風險因子, 而進行人工授精及豬舍出清後進行清潔消毒則是保護因子。基於以上調查結果, 建議在豬場的日常生物安全操作中, 加強對這些風險因子的防範措施, 以降低 SVA 感染的機率。

Seroprevalence Survey and Analysis of Neutralizing

Antibodies against Senecavirus A in Pigs

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Abstract

Senecavirus A (SVA), formerly known as Seneca valley virus, is a single-stranded positive-sense RNA virus belonging to the *Picornaviridae* family. SVA was first identified in cell culture contamination in 2002 and was subsequently detected in commercial pig herds in the United States in 2015. Since then, outbreaks have occurred in several countries, including Canada, Brazil, China, Colombia, and Thailand. SVA infection shares similarities with other vesicular diseases and is highly contagious. To date, there has been no available vaccines, and its presence in regions where other vesicular diseases, such as foot-and-mouth disease, are prevalent makes diagnosis and monitoring more challenging. In this study, we conducted a seroprevalence survey of SVA neutralizing antibodies in domestic pigs in Taiwan. Additionally, in collaboration with the College of Veterinary Medicine, National Taiwan University, we performed a risk factor analysis based on data from the pretest survey in 2021 and the subsequent testing in 2022. The analysis revealed that the presence of other pig farms in the vicinity, the occurrence of breeding activities within the pig farm, swill feeding, handling pigs by external personnel, and the presence of natural breeding activities in the pig farm were identified as risk factors associated with the presence of SVA neutralizing antibodies. Conversely, performing artificial insemination and cleaning and disinfecting pig houses thoroughly after depopulation were considered as protective factors. Based on the investigation results above, we recommend strengthening preventive measures against these risk factors in the routine biosafety operations to reduce the probability of SVA infection.