

比較不同豬流行性下痢病毒株之毒力

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摘要

自 2013 年起全球爆發大規模的豬流行性下痢 (PED) 疫情，臺灣也於 2013 年底陸續傳出相關疫情，於 2014 年全國各地方防治單位所送檢的 86 場 242 個下痢病例中，也有 46 場罹患豬流行性下痢，進一步分析其分子流行病學發現，此波豬流行性下痢疫情均是由一種新型變異的病毒株所造成，經由序列分析發現此新型 PEDV 有兩種病毒 (n-PEDV 與 variant n-PEDV)，n-PEDV 與美國高病原性 PEDV 序列相同，variant n-PEDV 則於 spike 蛋白的第 23 至 227 位置少 205 個胺基酸，然而，進一步以 7 日齡仔豬進行其毒力試驗時，發現 n-PEDV 與 variant n-PEDV 的 LD₅₀ 分別為 10⁶ 與 10⁷ TCID₅₀，且 n-PEDV 較 variant n-PEDV 可引發較強的下痢症狀與較長排毒天數，綜合以上研究結果顯示，n-PEDV 的毒力較 variant n-PEDV 強。

Comparison of virulence between various porcine epidemic diarrhea virus strains

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Abstract

Since 2013, porcine epidemic diarrhea (PED) had been re-emerged in Asia and America. The outbreak of PED was also occurred in Taiwan in late 2013 and led to the death of numerous suckling piglets. In 2014, a total of 46 farms from 86 farms were confirmed as positive for PEDV. The genomic sequence analysis found that there were two novel PEDV strains (n-PEDV and variant n-PEDV) and the gene was different in the N-terminal of S protein. The gene of n-PEDV strain was same as the highly virulent US strain. However, the variant n-PEDV had a 197 aa deletion in the S protein of n-PEDV. Comparison of virulence between n-PEDV and variant n-PEDV exhibited that the n-PEDV could induce the more severe diarrhea and longer days of PEDV shedding from feces than variant n-PEDV in the suckling piglets with 7 days of age. In summary, the n-PEDV was higher virulence than variant n-PEDV.