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豬環狀病毒疫苗之發展現況與檢驗標準介紹

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摘要

豬環狀病毒第二型（Porcine circovirus type 2；PCV2）為重要豬隻病毒性疾病，主要造成豬環狀病毒相關疾病（porcine circovirus associated disease, PCVAD），臨床症狀為消瘦、離乳後死亡率增加，並增加與其他病原混合感染的風險，造成養豬產業極大的經濟損失。豬環狀病毒感染症不活化疫苗可預防或減輕豬隻因豬環狀病毒第二型所造成的臨床症狀，降低死亡率，減少經濟損失。依製造方式，可分為全病毒不活化疫苗，及應用基因重組技術表現豬環狀病毒第二型之第二開放閱讀框架（Open reading frame 2；ORF2）基因，經細胞或適當表現系統增殖培養及不活化後加入適當佐劑之疫苗。因豬環狀病毒感染症疫苗產品包含多種形式及製程方式，目前評估此類疫苗效力之檢驗方式大致可區分為抗原相對效價試驗、抗原量檢測試驗及抗體力價試驗等，進行疫苗檢驗時，會依據疫苗特性選擇不同方式進行檢測。

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The Current Status of Porcine Circovirus Vaccine Development and the Introduction of Testing Standards

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Abstract

Porcine circovirus type 2 (PCV2) is a significant viral disease in pigs, primarily causing porcine circovirus-associated disease (PCVAD). The clinical symptoms include wasting, increased post-weaning mortality, and an elevated risk of co-infection with other pathogens, leading to immense economic losses in the pig industry. PCV2-inactivated vaccines can prevent or alleviate the clinical symptoms caused by PCV2, decreasing pig mortality and consequently reducing economic losses. There are two types of PCV-inactivated vaccines, and they are produced using different manufacturing methods. One is a whole-virus inactivated vaccine, and the other is a recombinant vaccine, which is produced by expressing the open reading frame 2 (ORF2) gene of PCV2 in the cell line or appropriate expression systems, followed by inactivation and the addition of suitable adjuvants. Due to the various forms and manufacturing processes of PCV2 vaccines, the choice of different examination methods for efficacy are based on their characteristics, such as relative potency, content of antigen, and antibody titer test, etc.