

水禽小病毒雙價組織培養疫苗之研發

製劑研究組

施雨華 助理研究員

摘要

水禽小病毒感染症 (waterfowl parvovirus infection) 由鵝源水禽小病毒 (goose parvovirus ; GPV) 或鴨源水禽小病毒 (muscovy duck parvovirus ; MDPV) 感染雛鵝及雛鴨，於臨床上呈現纖維素性壞死性腸炎、癒後發育不良及短嘴等。本病毒於鵝及正番鴨的纖維母細胞、胚胎蛋皆能增殖，但是鵝或正番鴨有一定之繁殖季節，SPF 胚胎蛋取得不易。因此擬開發水禽小病毒組織培養雙價活毒疫苗，可保護雛鴨雛鵝抵抗鴨源及鵝源水禽小病毒。

試製疫苗已完成安全試驗、效力試驗、免疫源性及迴毒試驗，結果顯示其安全性。於無移行抗體 1 日齡正番鴨免疫後 7 日鵝源及鴨源水禽小病毒抗體力價均可達 SN 力價 158 倍。為模擬現場有移行抗體情形，以抗水禽小病毒雙價卵黃抗體注射 1 日齡正番鴨模擬移行抗體，於移行抗體 SN 32 倍時免疫一劑量本製劑，於免疫後 7 日鵝源及鴨源水禽小病毒抗體力價均可達 SN 力價 80 以上倍。由試驗結果顯示本疫苗有良好之安全與效力。相較於以胚胎增殖之水禽小病毒疫苗，受限季節及 SPF 胚胎蛋取得不易，以組織培養製造疫苗可解決此問題。

Development of waterfowl parvovirus tissue culture bivalent live vaccine

Yu-Hua Shih

Abstract

Waterfowl parvovirus infection caused either by goose parvovirus(GPV) or by muscovy duck parvovirus(MDPV) that infected gosling and duckling showing clinical fibrous necrotizing enteritis, stunting and short beak. The viruses can be propagated in geese and Muscovy duck embryonic eggs and their fibroblast cell cultures, but goose and Muscovy duck have their own breeding seasons, the SPF embryo eggs are unavailable off their breeding seasons. So, we have to try to develop the waterfowl parvovirus tissue culture bivalent live vaccine for use in the field to protect ducklings and goslings against the infections of GDV and MDPV. Safety tests, efficacy test, immunogenicity and virus re-irulent tests have been completed. It has confirmed the vaccine is safety. One-day-old Muscovy ducklings with no maternally antibodies, each was vaccinated with a dose of the trial vaccine by IM and their serum neutralization (SN) antibody titers both against GDV and MDPV were reached 1:158 on 7 DPI (days post inoculation). To modified field conditions, one-day-old Muscovy ducklings injected anti- waterfowl parvovirus bivalent yolk antibody analog maternally antibodies. When their SN antibody titers were reached 1:32 inject each one dose, their SN antibody titers both against GDV and MDPV were reached 1:80 on 7 DPI. The results indicate that the vaccine has a good safety and effectiveness. Compared to the vaccine proliferate of embryo, which is limited by season and it is difficult to obtain SPF eggs, tissue culture vaccine production can solve this problem.