石斑魚虹彩及神經壞死病毒雙價不活化疫苗之研發

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摘要

本研究自田間選殖高毒力與抗原性之石斑魚虹彩病毒(Grouper iridovirus, GIV)及神經壞死病毒(Nervous necrosis virus, NNV)等疫苗株並試製成浸泡與注射型雙價不活化疫苗之研發評估試驗。以不同佐劑與攻毒途徑來評估疫苗之效力。浸泡型雙價不活化疫苗於安全性試驗結果發現以混以 PCNE 油質佐劑之成長情形表現較為佳，而於效力試驗結果發現以含有鋁膠佐劑之試製疫苗保護效果最佳，其相對保護指數(relative percent survival, RSP)分為 77 及 66.6。注射型雙價不活化疫苗之安全性結果皆可符合檢定要求，而在效力試驗結果發現神經壞死病毒以肌肉攻毒 $10^{6.2}TCID_{50}$/mL 的疫苗相對保護指數為 75；在虹彩病毒效力試驗評估部分以 $10^{7}TCID_{50}$/mL 進行腹腔攻毒，其存活率可達 90%，相對保護指數為 88.8。上述結果顯示:以含鋁膠佐劑之浸泡型雙價疫苗及含油質佐劑之注射型雙價疫苗皆有顯示其有效的疫苗防疫保護效果。

關鍵字: 虹彩病毒、神經壞死病毒、浸泡型雙價疫苗、注射型雙價疫苗

Development of bivalent vaccines of iridovirus and nervous necrosis virus in grouper

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In this project, we selected the field isolates with high virulence and antigenicity of grouper iridovirus (GIV) and nervous necrosis virus (NNV) as the seed virus for vaccination by immersion and injection. Different adjuvant formulas and administration rotes were tested for vaccine efficacy. The safety tests of bivalent vaccines with different formulas of adjuvant demonstrated that the vaccine mixed with PCNE oil adjuvant was better in growth of fish. The vaccine efficacy of vaccine mixed with aluminum adjuvant showed the highest protections against NNV and GIV challenge tests. The relative percent survival (RPS) values of NNV and GIV challenge tests were revealed to 77% and 66.6%, respectively. The vaccine efficacy of injection type bivalent vaccine was evaluated by intramuscular injection with $10^{6.2}TCID_{50}$/mL NNV virus and the result revealed the RPS was 75%. In addition, the vaccine efficacy of injection type bivalent vaccine was evaluated by intraperitoneal injection with $10^{7}TCID_{50}$/mL GIV virus and the result revealed the RPS was 88%. These results demonstrated the effective protections of injection and immersion- types bivalent vaccines for vaccination against NNV and GIV in giant grouper (*Epinephelus lanceolatus*).

Keyword：*iridovirus, nervous necrosis virus, immersion vaccine, injection vaccine*