石斑魚虹彩病毒不活化疫苗田間試驗結果分析

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摘要

本年度主要選定點帶及龍膽石斑二場進行石斑魚虹彩病毒不活化疫苗田間試驗。選取 2 吋半大小健康石斑魚苗，以腹腔注射第 1 劑量之疫苗後間隔 14 天，再補強接種第 2 劑之疫苗，而後於免疫後 3 及 6 個月，自田間試驗場購回魚隻回所進行效力試驗及代謝性評估。另於田間實驗期間觀察各組之存活率、注射安全性及體重及體長之生長情形，以評估疫苗使用與否對經濟效益之差異。初步結果顯示:在注射疫苗之安全性評估部份:建議使用於大於 10 克以上之石斑魚陰性場，而其注射方式及免疫流程如麻醉程度、恢復狀況，皆需經專業之訓練及事前評估。田間臨床疫苗效益評估:在龍膽石斑場，對照組與實驗組之存活率皆為 100%，但其實驗組之體重增重情形極顯著優於對照組；在青斑場之免疫成效，經免疫後 11 個月，其免疫組之存活率為 74.6%；對照組之存活率為 50%。在實驗室之效力評估:在龍膽石斑場，於免疫後 3 及 6 個月之疫苗效力是合格的；青斑場之免疫成效，於免疫後 3 個月之疫苗效力是合格的，免疫後 6 個月其對照組用最高之病毒力價攻毒已無法造成死亡。本試製疫苗於點帶石斑及龍膽石斑之試驗場皆獲得有效之保護效果，除了魚隻之存活率顯著優於對照組之外，有施打本疫苗其體重增重皆優於未施打者。

Results analysis of inactivated grouper iridovirus vaccine in field trial

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Abstract

The objective of the present study was to performed field trials for an inactivated iridovirus vaccine for grouper(*Epinephelus coioides*) and king grouper (*Epinephelus lanceolatus*). We chose about 2.5-inch in sizes, health fish and immunized them with an inactivated vaccine against grouper iridovirus (GIV) by intraperitoneally route, and then boostered at 14 day post immunizaion. After immunized 3 and 6 months later, we captured the fishes from the field and evaluated the metabolic analysis and efficacy of the vaccine. In addition, we calculated the mortalities, injection safety, growth conditions and weight gains between the vaccinated and control groups. The preliminary results showed: a trial product was recommended to apply in the fish with body weight greater than 10 g； the injection procedures, anesthesia and recovery conditions all need professional training and pre-assessments. The benefit analysis of clinical usage showed: in the king grouper farm, the survival rates was 100％ both in vaccinated and control groups, but the weight gain in vaccinated group was significantly ($p < 0.001$) greater than that in the control fish. Additionally, at 11 months post immunization, the survival rates in the vaccinated group and control group of the grouper farm were 74.6％ and 50％, respectively. Under laboratory condition, the vaccine efficacy was determined as validated in both grouper and king grouper farms at 3 months post immunization. The efficacy was not evaluated at 6 months post immunization because the control group fish survived in the highest-dose challenge($10^9 TCID_{50}$/mL). These results suggested that the inactivated vaccine against GIV was effective in the 2 field trial.