

第七基因型新城病活毒疫苗開發及反向遺傳學平台介紹

製劑研究組

許愛萍 助理研究員

摘要

新城病是一禽類重要疾病，因它會導致家禽產業上嚴重經濟損失，使得新城病疫苗的投予在世界上每個家禽場幾乎是必要的。透過連續人工馴化減毒，本所已成功研製一第七基因型新城病活毒疫苗，並設立反向遺傳學技術用以修改該疫苗株使其安全性及抗原性提升，目前該疫苗株無論效力、安全、病原性、迴毒試驗成果皆優異，符合我國及歐盟新城病活毒疫苗檢定標準。本所亦利用反向遺傳學技術探討該疫苗株毒力因子，發現其減毒機制具新穎性，預計本年度將完成本疫苗株專利申請手續。本次研討會將一併介紹本所第七基因型新城病活毒疫苗開發過程、成果及其未來應用(多價載體疫苗平台開發)。

Introduction to Development of Newcastle Disease Live Vaccine of Genotype VII and Reverse Genetics Platform

Ai-Ping Hsu

Abstract

Newcastle Disease (ND) is a highly contagious avian disease and causes serious economic losses in the poultry industry annually. Thus, the implementation of ND vaccines is necessary for every poultry farm worldwide. The Animal Health Research Institute (AHRI) has successfully developed an ND live vaccine of genotype VII based on a serially artificial attenuation from a wild type virus; moreover, to modify the above vaccine strain, by establishing reverse genetics technique, the safety and antigenicity properties were enhanced hence. The results of efficacy, safety, pathogenicity, and virulence reversion were all satisfactory and complied to the assay standards for ND live vaccine in both European Union and Taiwan. In addition, the reverse genetics technique was also used to figure out the virulence factor of the vaccine strain, and the novel attenuation mechanism was discovered and accordingly applied for patent this year. In this seminar the development process of the live vaccine, the achievements obtained, and its future application (the invention of multivalent vector vaccine platform) will be presented as well.