Preparation of Standard Anti-Surem and Antigens of Influenza Viruses

Abstract

The Influenza viruses are highly infectious and cause local outbreaks annually in many countries. Four or five pandemics of influenza occurred during the 20th century with intervals of 9–39 years. The H1N1 pandemic of 1918–19 was the most devastating, with 40–50 million deaths. However, the cumulative mortality from influenza during the intervening years is generally many times greater than that associated with pandemic. The influenza viruses were characterized with high mutation of the genome and frequent change of antigenicity. Therefore, it is necessary that the composition of influenza vaccines are changed and recommended by WHO annually, depending on the circulating viral strains. The antigenic types of influenza viruses were determined by using the haemagglutination-inhibition (HI) tests with postinfection ferret sera. Ferret is considered as the best animal models for influenza virus. The viral infection symptom of ferret is much similar to human. The postinfection ferret sera are required for identifying serotypes of influenza viruses. For surveillance of influenza viruses in Taiwan, it is important to establish the immunization of influenza viruses to ferret model and generate the postinfection ferret sera. In this study, we used the ferrets as the animal model for influenza viruses, including the breeding and immunization of ferret. We selected the predominant circulating strains of influenza viruses in Taiwan for immunization of ferrets and generated 4 local strains isolated in Taiwan and 1 H5N1 vaccine strain of the postinfection ferret sera. We also used these sera to identify the serotyes of the new isolates from Taiwan and characterize the antigenicity of major circulating H1N1 isolates in Taiwan during 2004-2006.

Keywords: influenza virus, ferret, antiserum