

ABSTRACT

CONSTRUCTION OF INDONESIAN-STRAIN AVIAN FLU VIRUS SEED VACCINE USING LOW PATHOGENIC HEMAGGLUTININ GENE AND NEURAMINIDASE PR8 GENE THROUGH REVERSE GENETIC

Reviany Vibriaanita Nidom

Avian Influenza has been spreading in Indonesia since 2003. AI virus infected animal such as bird, mammalian and others. Since 2005, AI have infected human and data the suspect have reached 132 persons and was the highest cases in the world. One of the protection against infection is vaccination. Until now there are not any H5N1 influenza vaccine, because the pathogenicity of the virus is high so it is difficult to obtain high yield of seed vaccine. So we look for new propagation media that allow to be used as seed vaccine media and to replace embryonated chicken eggs when the H5N1 virus become pandemic worldwide and the stockpile of embryonated chicken egg are decreased. One of promising cell line to be used is Vero cell.

In this research, we constructed H5N1 virus with low pathogenic HA gene and NA gene from PR8 (H1N1) using reverse genetic method. The new virus then inoculated in three medias which were embryonated chicken eggs, MDCK cell and Vero cell. We tested the H5N1 virus (RG) using molecular methods such as PCR, sequencing and for the pathogenicity tests we used IED50, TCID50 and IVPI. New H5N1 virus (RG) also tested in mice to observe the antibody titer and challenge.

The result, we found that the H5N1 virus (RG) low pathogenic was successfully made. From molecular data no amino acids or nucleotides were changed. From pathogenicity test we found that the pathogenicity of H5N1 virus (RG) was low with IVPI index was 0. From in vivo study we found that the highest titer was 256 GMT and the highest survival rate was 85.71%.

Keywords : Avian Influenza, H5N1, reverse genetic, vero, low pathogenic