

ABSTRACT**THE POTENTIAL OF ANTI-NEURAMINIDASE ANTIBODY OF EGG YOLK (IgY) AS EFFORT OF IMMUNOTHERAPY AGAINST AVIAN INFLUENZA VIRUS****Retno Wulan Handayani**

Neuraminidase (NA) is the major surface glycoprotein of the avian influenza virus which processes critical enzymatic activity and has been considered as a suitable target for designing agents against influenza viruses. NA protein can induce antibody inhibitor of NA virus activity in replication cycle in host cell. The purpose of this study is to prove anti-NA antibody of egg yolk (IgY) inhibition of growth of Avian Influenza virus subtype H5N1 with inhibition hydrolysis of galactose and N-acetylneuraminic acid of oligosaccharida-glycoprotein chain.

This study represents of laboratories exploration and descriptive research. This study is divided become three phase; first, characterization of neuraminidase protein with SDS-PAGE and Western Blot Methods, Elusi of neuraminidase protein, determination of protein rate result of elusi, immunogenic and antigenic test of neuraminidase protein. Second, Isolation of antibody anti-NA egg yolk, purification anti-NA antibody, immunogenic test of anti-NA antibody using dot blot method. Third, Challenge and immunotherapy at chickens, detection antibody-idiotype (Anti-anti-NA) and immunohistochemistry method for detection Avian Influenza virus and tying anti-NA antibody in tropism cell.

The Result of this study, chickens with doses of immunotherapy using anti-NA antibody 50, 100 and 200 µg given before infection, at the same times with infection, one day after infection and two days after infection showed percentage of protection successively 93,3 %, 53,3 %, 73,3 % dan 6,7 %. The result of immunohistochemistry showed that antigen of Avian Influenza virus were detected in ileum of chicken with doses 0 µg, 50 µg and 100 µg; and anti-NA antibody were detected in ileum of chicken with doses 50 µg, 100 µg and 200 µg.

NA protein can induce antibody and can reaction with anyi-NA antibody specificly; Antibody of anti-NA have ability fasten antigen and can protect chicken againts avian influenza virus subtype H5N1 infection up to 93,3%; mechanism protection againts Avian Influenza subtype H5N1 infection happened with inhibition hydrolysis of galactose and N-acetylneuraminic acid of oligosaccharida-glycoprotein chain by anti-NA antibody at cell tropism; and anti-idiotype antibody (anti-anti-NA) not detected at chickens.

Keywords : Avian Influenza, Anti-Neuraminidase, Immunotherapy, IgY.