

**ABSTRACT****THE EFFECT OF TRIVALENT INFLUENZA VACCINES ON ANTIBODY RESPONSES, IMUNOGLOBULIN G AND INTERLEUKIN 4 IN FERRET (*MUSTELA PUTORIUS FURO*)****Lestari Dewi**

**Background and Aim:** to prove the influence of trivalent influenza vaccination on antibody responses, immunoglobulin G, and interleukin 4

**Materials and Methods :** Fifty ferrets were separated into two groups, Group 1 which was treated with a single shot and Group 2 with two shots. Each group was divided into 5 small groups; they were control group, group of trivalent vaccine with the dose of 3.8 µg, group with the dose of 7.5 µg, group with the dose of 15 µg, and group with the dose of 30 µg. Ferrets with one shot treatment were vaccinated with trivalent vaccine, intramuscular. Three weeks later, they were challenged by H1N1 and H3N2 virus. Ferrets with the two shots treatment received two vaccinations and two challenge tests. Serum was taken and examined for its antibody titers, immunoglobulin G, and interleukin 4 on Day 35 for one shot treatment groups and Day 56 for the groups with two shots treatment. SPSS 23 was employed for data analysis.

**Result:** From the research results, it was found that there is an enhancement in antibody titer ( $p < 0,05$ ), IgG levels in the dose group 3.8 µg and 7.5 µg one shot method ( $p < 0,05$ ), and positive correlation between the vaccine dose of 3.8 µg one shot method and the formation of antibody titers against H1 and H3 antigens, and there is a positive correlation between antibody titers (H1 and H3 antigen) with specific IgG levels H1 and H3 antigens.

**Conclusion :** There was an increase in antibody response to ferret (*Mustela putorius furo*) vaccinated with trivalent influenza at all given vaccination doses, in one shot and two shot methods, increased levels of immunoglobulin G in ferret (*Mustela putorius furo*) were vaccinated with trivalent influenza at doses of 3.8 µg and 7.5 µg of one shot method, there was no increase in levels of interleukin 4 in ferret (*Mustela putorius furo*) vaccinated with trivalent influenza, there was no change in ferret body weight (*Mustela putorius furo*) vaccinated with trivalent influenza, no changes in ferret (*Mustela putorius furo*) dawn temperature were vaccinated with trivalent influenza, and there is a positive correlation between the vaccine dose of 3.8 µg one shot method and the formation of antibody titers against H1 and H3 antigens, and there is a positive correlation between antibody titers (H1 and H3 antigen) with specific IgG levels H1 and H3 antigens.

Keywords: trivalent vaccine, IL-4, IgG, antibody titers