

**ANTIVIRAL ACTIVITY EFFECT OF SILVER NANOPARTICLES (AgNPs)
SOLUTION AGAINST THE GROWTH OF INFECTIOUS BURSAL
DISEASE VIRUS ON EMBRYONATED CHICKEN
EGGS WITH ELISA TEST**

Rosa Pangestika

ABSTRACT

This research is conducted to examine the effect of antiviral activity of a solution of silver nanoparticles (AgNPs) against *infectious bursal disease virus* growth in embryonated chicken eggs with ELISA test. The research has two methods, the first method is conducted by mixing a solution of AgNPs and IBD virus for two hours at room temperature before inoculated in embryonated chicken eggs (preventive method) and the second method is the virus inoculated, then 48 hours later the AgNPs solution injected (therapy method). Each method has several dose of AgNPs solution, respectively: 0ppm AgNPs solution (positive control), 10ppm, 20ppm and 50ppm. Virus samples taken from the *chorioallantoic* membrane (CAM) and the embryo by crushed method. Results based on the value of OD (*Optical Density*) ELISA test and statistical test *ANOVA General linear models univariate* with *Post-Hoc Duncan 5%* indicates a solution of AgNPs has antiviral activity in both methods, the method I and method II, there were no significant difference ($p > 0.05$), the solution AgNPs has preventative and therapeutic characteristic. The mean of OD values also showed dose of 20ppm is most excellent dose in the fight against the virus, the dose has significant effect and differences ($p < 0.05$). The decreasing amount of virus in the CAM and embryos were not significantly different ($p > 0.05$), in both the CAM and embryos AgNPs solution has good antiviral properties.

Keywords : silver nanoparticles, infectious bursal disease virus, *chorioallantoic* membrane, embryo, embryonated chicken eggs, ELISA, antiviral.