

## ABSTRACT

The hibiscus plant (*Hibiscus tiliaceus*) is one of many plants that can produce secondary metabolites with antibacterial and antioxidant activity. Endophytic bacteria that are in symbiosis with waru also have the ability to produce secondary metabolite compounds that are similar to the secondary metabolites produced by their host plants. Previous research has succeeded in isolating 11 (Z1-Z11) isolates of endophytic bacteria from the bark of hibiscus trees (*Hibiscus tiliaceus*). This study aims to obtain phenotypic data, growth curves, secondary metabolite production, phytochemical screening, secondary metabolite antibacterial activity tests and secondary metabolite antioxidant activity tests of Z7 endophytic bacteria. The results showed that the endophytic bacteria of Z7 waru tree bark were gram-positive bacteria. Based on the results of phytochemical screening, secondary metabolites of Z7 endophytic bacteria contain alkaloids. Based on the results of the growth curve, secondary metabolite production was carried out in the final stationary phase (22nd hour), early death phase (24th hour) and late death phase (28th hour). The antibacterial activity test showed that secondary metabolites of endophytic bacteria Z7 were able to inhibit the growth of *Staphylococcus aureus* and *Escherichia coli* bacteria with the best results shown by secondary metabolites produced at the 28th hour with a minimum inhibitory concentration of 50,000 ppm. The antioxidant activity test showed that secondary metabolites of endophytic bacteria Z7 had the best antioxidant capacity at the 28th hour of production with an IC50 value of 23.14 ppm.

**Keywords** : Endophytic bacteria, *Hibiscus tiliaceus*, antibacterial, antioxidant.