

ABSTRACT

Fathan Arkani. 24020220140088. Potential of Bacterial Isolates from Bledug Kesongo as Producers of Antibacterial Compounds Against *Methicillin-resistant Staphylococcus aureus* and *Methicillin-susceptible Staphylococcus aureus*. Under the guidance of Anto Budiharjo and Agung Suprihadi.

Microorganisms that live in extreme environments are very abundant and there are still many that have not been studied, one of which is halophilic microorganisms from Bledug Kesongo. The potential of microorganisms in extreme environments is very much to be applied in various fields of life. One of the potentials is as a producer of antibacterial compounds against pathogenic bacteria. Bacterial isolates from Bledug Kesongo have the potential to produce antibacterial compounds that are antagonistic to *Methicillin-resistant Staphylococcus aureus* (MRSA) and *Methicillin-susceptible Staphylococcus aureus* (MSSA). This research was conducted with the aim of knowing the potential of bacterial isolates derived from Bledug Kesongo in inhibiting the growth of MRSA and MSSA and identifying the species of isolate based on 16S rRNA molecular identification. The research method was carried out by disc diffusion method and 16S rRNA molecular identification. From 35 isolates, 9 isolates were found to be able to inhibit the growth of MRSA. BK 24 is the isolate with the largest average inhibition zone diameter against MRSA. Molecular identification has been done to BK 24 and found out that BK 24 has the closest similarity with *Billgrantia campisalis* strain HW61 with percentage identity value 97,70%. According to the research that has been done, it can be concluded that isolates from Bledug Kesongo have potential to be producers of antibacterial compounds against MRSA. Isolate BK 24 which can inhibit the growth of MRSA has been identified molecularly as having the closest similarity to *Billgrantia campisalis* strain HW61.

Keywords: *antibacterial, Bledug Kesongo, molecular identification, MRSA, MSSA*