

ABSTRACT

Aulia Mei Rinanta. 24020121130057. **Antibacterial Activity of Seaweed Associated Bacteria *Caulerpa* sp. against Pathogens Methicillin-Resistant *Staphylococcus aureus* (MRSA) and Methicillin-Susceptible *Staphylococcus aureus* (MSSA).** Supervised by Anto Budiharjo and Siti Nur Jannah.

Caulerpa sp. is one of the green seaweeds that spread almost throughout the coastal waters of Indonesia. In addition to producing its own bioactive compounds, *Caulerpa* sp. is known to have associated bacteria that can produce bioactive compounds. Bacteria associated with *Caulerpa* sp. are able to produce bioactive compounds that can inhibit the growth of pathogenic bacteria, so they have potential as antibacterials. This study aims to isolate and test the antibacterial activity of *Caulerpa* sp. associated bacteria, and conduct molecular identification using the 16S rRNA gene on bacterial isolates that have the largest inhibition zone. A total of 13 isolates of associated bacteria were successfully obtained from the isolation process. The results of the antibacterial activity test showed that 3 bacterial isolates produced inhibition zones with a weak category against the pathogen methicillin-susceptible *Staphylococcus aureus* (MSSA), namely isolate C4 by 3.3 mm; isolate C6 by 3 mm; and isolate C7 by 3.1 mm, while no bacterial isolates produced inhibition zones against the pathogen methicillin-resistant *Staphylococcus aureus* (MRSA). Qualitative phytochemical test results showed that bacterial isolate C4 showed positive reactions to flavonoids, alkaloids, and saponins. Bacterial isolate C4 is known as *Pseudoalteromonas undina* based on the results of molecular identification.

Keywords: Antibacterial activity, associated bacteria, Caulerpa sp., MRSA, MSSA, phytochemical screening, molecular identification