

DESI CATURINI PUSPITASARI NIM. 15.03.411.00069. Aktivitas Antibakteri Ekstrak Bakteri Simbion Karang Lunak *Lobophytum* sp. dan *Cladiella* sp. yang Diperoleh dari Habitat Alami dan Hasil Budidaya Terhadap Bakteri *Multi Drug Resistant Escherichia coli* dan *Methicilin Resistant Staphylococcus aureus*. Di bawah bimbingan **Insafitri, ST., M.Sc., Ph.D.**

ABSTRAK

Resistensi bakteri patogen menjadi masalah besar di dunia kesehatan, seperti contohnya bakteri patogen manusia, yaitu MDR *Escherichia coli* dan *Methicilin Resistant Staphylococcus aureus*. Pencarian sumber antibakteri baru perlu dilakukan untuk mengatasi masalah tersebut. Potensi antibiotik banyak ditemukan dari sumber daya laut khususnya spons dan karang lunak. Penelitian ini bertujuan untuk mengetahui aktivitas antibakteri ekstrak bakteri simbion karang lunak *Lobophytum* sp. dan *Cladiella* sp. yang diperoleh dari habitat alami dan hasil budidaya terhadap bakteri MDR *Escherichia coli* dan *Methicilin Resistant Staphylococcus aureus*. Penelitian ini dilakukan dengan metode ekstraksi isolat bakteri terpilih, yaitu isolat bakteri LB 6.1 dan isolat bakteri CB 4.1. Tahap selanjutnya melakukan pengujian ekstrak sebagai antibakteri terhadap bakteri patogen dengan konsentrasi ekstrak 100%. Hasil uji kemampuan ekstrak bakteri simbion CB 4.1 dan LB 6.1 diketahui bahwa ekstrak CB 4.1 mampu menghambat pertumbuhan bakteri patogen *S. aureus* dan *E. coli* dengan kekuatan lemah sedangkan ekstrak bakteri LB 6.1 mampu menghambat pertumbuhan bakteri patogen *S. aureus* dengan kekuatan sedang. Sekuen DNA bakteri CB 4.1 memiliki kemiripan sebesar 99,43% dengan bakteri *Bacillus paramycoides* dan sekuen DNA bakteri LB 6.1 memiliki kemiripan sebesar 100% dengan bakteri *Bacillus subtilis* di bank data NCBI.

Kata kunci: resistensi, karang lunak, antibakteri, ekstrak bakteri.

DESI CATURINI PUSPITASARI NIM. 15.03.411.00069. Antibacterial Activity of Symbiont Bacteria Extract of Soft Coral *Lobophytum* sp. and *Cladiella* sp. Obtained from Natural Habitat and Results of Cultivation Against Multi Drug Resistant *Escherichia coli* and Methicilin Resistant *Staphylococcus aureus* Bacteria. Advisor: **Insafitri, ST., M.Sc., Ph.D.**

ABSTRACT

The resistance of pathogenic bacteria is a major problem in the health world, such as human pathogenic bacteria, namely MDR Escherichia coli and Methicilin Resistant Staphylococcus aureus. The study for new antibacterial sources necessary to overcome this problem. The potential antibiotics was found from marine resources, especially sponges and soft corals. This study aims to determine the antibacterial activity of symbiont bacteria extract of Lobophytum sp. and Cladiella sp. That was obtained from natural habitat and cultivation results against MDR Escherichia coli and Methicilin Resistant Staphylococcus aureus bacteria. This research was conducted by extracting selected bacterial that isolates, namely LB 6.1 isolates bacterial and CB 4.1 isolates bacterial. The next step was tested of extract as an antibacterial of pathogenic bacteria with an extract 100% concentration. The test results ability of CB 4.1 and LB 6.1 symbiotic bacteria extract were known that CB 4.1 extract was able to inhibit the growth of pathogenic S. aureus and E. coli bacteria with weak strength while bacterial LB 6.1 extract was able to inhibit the growth of medium strength of S. aureus pathogenic bacteria. The sequence of CB 4.1 bacterial DNA has 99.43% similarity with Bacillus paramycoides and the sequences of LB 6.1 bacterial DNA having 100% similarity with Bacillus subtilis bacteria in NCBI bank data.

Key words: resistance, soft coral, antibacterial, bacterial extract.