

Siti Imamatul Imro'ah. NPM 20.03.5.1.1.00008. Skrining Aktivitas Antibakteri Isolat Actinomycetes Dari Rizhosfer Mangrove *Rizhopora mucronata* Terhadap Resistensi Bakteri *Eschericia coli*. Dibawah bimbingan bapak **Dr. Haryo Triajie, S.Pi., M.Si.**

Mangrove termasuk ekosistem interfase antara lingkungan pantai dan darat yang unik dan kaya hayati yang membentuk komunitas dengan istilah hutan mangrove atau hutan bakau. Struktur kimia yang sangat kompleks ini diduga berasal dari peran mikroorganisme di ekosistem mangrove yang mampu menghasilkan senyawa yang dapat menjadi sintesis obat baru bagi bakteri patogen yang resisten terhadap antibiotik dan diduga memiliki potensi sebagai antibiotik yang resisten. *Eschericia coli* merupakan bakteri yang tergolong kelompok bakteri *Coliform*, jika semakin tinggi makan menyebabkan kontaminasi pada lingkungan perairan. Oleh karena itu, untuk menanggulangi suatu infeksi penyakit dari lingkungan perairan maka perlu dilakukan penelitian untuk mengetahui aktivitas antibakteri pada *Actinomycetes*. Prosedur yang digunakan dalam penelitian ini yaitu preparasi sampel, isolasi, karakterisasi morfologi koloni bakteri, purifikasi, uji antibakteri, pewarnaan Gram dan uji biokimia. Hasil uji antibakteri terhadap *Actinomycetes* menggunakan bakteri patogen *E.coli* menggunakan metode *Agar Well Difussion*. Hasil pengujian diperoleh bahwa 6 isolat *Actinomycetes* yang mampu menghambat bakteri *E.coli* adalah isolat K3.CI.B karena ditemukan zona bening di sekitar isolat skala medium. Hasil uji pewarnaan Gram diperoleh 6 isolat bersifat bersifat positif, sedangkan uji biokimia menggunakan 2 jenis uji yaitu uji katalase yang bertujuan untuk mengetahui enzim katalis dan uji KOH 3% untuk mengetahui adanya lendir. Hasil uji katalase diperoleh 2 isolat positif, sedangkan uji KOH3% diperoleh hasil 6 isolat positif.

Kata kunci: *Actinomycetes, agar well diffusion, rhizosfer.*

Siti Imamatul Imro'ah. NPM 20.03.5.1.1.00008. Screening of the Antibacterial Activity of *Actinomycetes* Isolates from the Mangrove Rhizosphere *Rizhopora mucronata* Against *Escherichia coli* Bacterial Resistance. Under the guidance of **Dr. Haryo Triajie, S.Pi., M.Sc.**

Mangroves are a unique and biologically rich interphase ecosystem between coastal and terrestrial environments that form communities known as mangrove forests or mangrove forests. This very complex chemical structure is thought to originate from the role of microorganisms in the mangrove ecosystem which are capable of producing compounds that can be used to synthesize new drugs for pathogenic bacteria that are resistant to antibiotics and are thought to have the potential to become antibiotic resistant. *Escherichia coli* is a bacterium belonging to the Coliform bacteria group, if it eats too much it causes contamination of the aquatic environment. Therefore, to overcome disease infections from the aquatic environment, it is necessary to carry out research to determine the antibacterial activity of *Actinomycetes*. The procedures used in this research were sample preparation, isolation, morphological characterization of bacterial colonies, purification, antibacterial tests, Gram staining and biochemical tests. Results of antibacterial tests against *Actinomycetes* using the pathogenic bacteria *E.coli* using the Agar Well Difusion method. The test results showed that the 6 *Actinomycetes* isolates that were able to inhibit *E. coli* bacteria were isolate K3.CI.B because a clear zone was found around the medium scale isolate. The results of the Gram staining test obtained from 6 isolates were positive, while the biochemical test used 2 types of tests, namely the catalase test which aims to determine the catalyst enzyme and the 3% KOH test to determine the presence of mucus. The catalase test results obtained 2 positive isolates, while the KOH3% test resulted in 6 positive isolates.

Keywords: *Actinomycetes, agar well diffusion, rhizosfer.*