

ABSTRAK

Potensi Antibakteri Ekstrak Metanol *Gracilaria* sp. terhadap *Escherichia coli* dengan Metode Difusi Cakram

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Penggunaan sumber daya laut sebagai alternatif bahan antibakteri alami semakin berkembang dalam beberapa tahun terakhir. *Gracilaria* sp., sejenis alga merah, diketahui memiliki kandungan metabolit sekunder yang berpotensi sebagai agen antibakteri, khususnya terhadap *Escherichia coli*. Penelitian ini bertujuan untuk menentukan potensi antibakteri ekstrak metanol *Gracilaria* sp. terhadap *E. coli* menggunakan metode jenis eksperimental dengan Rancangan Acak Lengkap (RAL) dengan analisis data *One-Way* ANOVA dan dilanjutkan dengan Uji Tukey. Larutan stok ekstrak dibuat dengan konsentrasi 100 mg/mL dan diuji pada konsentrasi 0,05%, 1%, 5%, dan 10% dengan kontrol positif ciprofloxacin dan kontrol negatif akuades steril. Pengujian dilakukan dalam tiga kali pengulangan. Hasil penelitian menunjukkan bahwa ekstrak metanol *Gracilaria* sp. menghasilkan zona hambat yang terbentuk pada konsentrasi tertinggi 10% dan 5% dengan rata-rata hanya mencapai (0,075 mm). Dengan demikian, ekstrak metanol *Gracilaria* sp. memiliki potensi antibakteri yang lemah terhadap *Escherichia coli*, karena zona hambat yang terbentuk jauh lebih kecil dibandingkan kontrol positif yang mencapai 1,7 mm.

Kata kunci: *Gracilaria* sp., antibakteri, *Escherichia coli*, difusi cakram, ekstrak metanol.

ABSTRACT

Antibacterial Potential of Methanolic Extract of *Gracilaria* sp. Against *Escherichia coli* Using the Disk Diffusion Method

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The use of marine resources as an alternative source of natural antibacterial agents has been increasingly developed in recent years. *Gracilaria* sp., a type of red algae, is known to contain biologically active compounds that have potential as antibacterial agents, particularly against *Escherichia coli*. This study aimed to determine the antibacterial potential of the methanolic extract of *Gracilaria* sp. against *E. coli* using an experimental method based on a Completely Randomized Design (CRD). Data were analyzed using One-Way ANOVA followed by Tukey's test. A stock solution of the extract was prepared at a concentration of 100 mg/mL and tested at concentrations of 0.05%, 1%, 5%, and 10%, with ciprofloxacin as the positive control and sterile distilled water as the negative control. The test was conducted in three replicates. The results showed that the methanolic extract of *Gracilaria* sp. produced an inhibition zone at the highest concentrations (10% and 5%) with an average diameter of only 0.075 mm. Therefore, the methanolic extract of *Gracilaria* sp. has weak antibacterial potential against *Escherichia coli*, as the inhibition zone formed is significantly smaller than that of the positive control, which reached 1.7 mm.

Keywords: *Gracilaria* sp., antibacterial, *Escherichia coli*, disk diffusion, methanolic extract.