

## ABSTRAK

**Anggi Nai Fitri Rambe, NIM 4212220004 (2025). Uji Aktivitas Antibakteri Ekstrak Etanol Daun Galunggung (*Blumea balsamifera* L.) Terhadap *Shigella dysenteriae* Secara *In Vitro*.**

Penelitian ini bertujuan untuk mengetahui kandungan metabolit sekunder pada ekstrak etanol daun galunggung (*Blumea balsamifera* L.) dengan metode GC-MS (*Gas Chromatography-Mass Spectrometry*) dan aktivitas antibakteri serta konsentrasi hambat minimum dan konsentrasi bunuh minimum terhadap bakteri *Shigella dysenteriae*. Penelitian ini dilaksanakan pada bulan Februari – Juni 2025 di Laboratorium Mikrobiologi, Jurusan Biologi, FMIPA, Universitas Negeri Medan serta di UPTD. Laboratorium Kesehatan Daerah Medan. Metode ekstraksi dilakukan dengan cara maserasi menggunakan pelarut etanol 96%. Kelompok perlakuan pada penelitian ini terdiri dari konsentrasi 10%, 20%, 30%, 40%, 50%, 60%, serta terdapat kontrol positif dan kontrol negatif. Kandungan metabolit sekunder ekstrak etanol daun galunggung terdapat 47 senyawa bioaktif, dan 5 diantaranya senyawa dominan golongan terpenoid yang berpotensi sebagai antibakteri. Berdasarkan hasil uji *One Way Anova* menunjukkan nilai signifikansi sebesar 0,000 yang menandakan bahwa ekstrak daun galunggung (*Blumea balsamifera* L.) dapat menghambat pertumbuhan bakteri *S. dysenteriae*. Pengkategorian diameter zona hambat yang terbentuk yaitu  $\leq 5$  mm tergolong lemah, 6-10 mm tergolong sedang, 11-20 mm tergolong kuat,  $\geq 21$  mm tergolong sangat kuat. Konsentrasi 60% ekstrak daun galunggung merupakan konsentrasi terbaik dalam membentuk zona hambat yaitu 8,91 mm dengan kategori sedang. Konsentrasi hambat minimum dan Konsentrasi bunuh minimum pada *S. dysenteriae* yaitu konsentrasi 60%. Kesimpulan dari penelitian ini adalah ekstrak etanol daun galunggung memiliki aktivitas antibakteri terhadap bakteri *Shigella dysenteriae*.

Kata kunci: Bakteri, daun galunggung, senyawa metabolit sekunder, *in vitro*.

## ABSTRACT

### **Anggi Nai Fitri Rambe, NIM 4212220004 (2025). Antibacterial Activity Test of Ethanol Extract of Galunggung Leaves (*Blumea balsamifera* L.) Against *Shigella dysenteriae* In Vitro.**

This study aims to determine the content of secondary metabolites in the ethanol extract of galunggung leaves (*Blumea balsamifera* L.) using the GC-MS (Gas Chromatography-Mass Spectrometry) method and antibacterial activity as well as the minimum inhibitory concentration and minimum bactericidal concentration against *Shigella dysenteriae* bacteria. This study was conducted in February - June 2025 at the Microbiology Laboratory, Department of Biology, FMIPA, Medan State University and at the UPTD. Medan Regional Health Laboratory. The extraction method was carried out by maceration using 96% ethanol solvent. The treatment groups in this study consisted of concentrations of 10%, 20%, 30%, 40%, 50%, 60%, and there were positive and negative controls. The content of secondary metabolites in the ethanol extract of galunggung leaves contained 47 bioactive compounds, and 5 of them were dominant compounds of the terpenoid group which had the potential as antibacterials. Based on the results of the One Way Anova test, a significance value of 0.000 indicates that galunggung leaf extract (*Blumea balsamifera* L.) can inhibit the growth of *S. dysenteriae* bacteria. The categorization of the diameter of the inhibition zone formed is  $\leq 5$  mm which is classified as weak, 6-10 mm is classified as moderate, 11-20 mm is classified as strong,  $\geq 21$  mm is classified as very strong. The concentration of 60% galunggung leaf extract is the best concentration in forming an inhibition zone which is 8.91 mm with a moderate category. The minimum inhibitory concentration and minimum killing concentration on *S. dysenteriae* are 60% concentration. The conclusion of this study is that the ethanol extract of galunggung leaves has antibacterial activity against *Shigella dysenteriae* bacteria.

Keywords: Bacteria, galunggung leaves, secondary metabolite compounds, in vitro.