

## INTISARI

Kulit menjadi ekosistem yang baik bagi beragam mikroorganisme yang kompleks dan dinamis. *Staphylococcus epidermidis* termasuk salah satu mikroorganisme penghuni kulit. Bakteri ini beradaptasi terhadap perubahan lingkungan mikro kulit dan dapat berubah menjadi patogen oportunistik dengan membentuk biofilm. Dengan demikian *S. epidermidis* terlibat dalam disbiosis kulit secara umum, seperti jerawat atau dermatitis atopik. Penelitian ini bertujuan untuk mengetahui aktivitas antibiofilm ekstrak air, ekstrak etanol 70% dan nanopartikel perak ekstrak air daun mobe terhadap biofilm bakteri *S. epidermidis*. Daun Mobe diperoleh dari Sumatera Utara dan NPS ekstrak air diperoleh dari penelitian sebelumnya. Ekstrak air diperoleh dengan cara maserasi sedangkan ekstrak etanol dilakukan dengan cara maserasi kemudian dikentalkan. Uji aktivitas antibiofilm dilakukan dengan metode *broth* mikrodilusi menggunakan kristal violet untuk pewarnaan biofilm. Data yang diperoleh dianalisis dengan metode *one way* ANOVA.

Hasil uji aktivitas antibiofilm didapatkan bahwa ekstrak etanol 70%, nanopartikel perak ekstrak air, dan ekstrak air daun mobe memiliki aktivitas antibakteri, aktivitas inhibisi dan aktivitas eradikasi biofilm *S. epidermidis*. Berdasarkan penelitian ini, aktivitas antibakteri terbesar dimiliki oleh ekstrak etanol 2500 ppm sebesar 80,02%, aktivitas inhibisi biofilm 24 jam dan 48 jam terbesar dimiliki oleh nanopartikel perak ekstrak air daun mobe 1250 ppm sebesar 57,35% dan 62,12%, aktivitas eradikasi biofilm 24 jam terbesar dimiliki oleh nanopartikel perak ekstrak air daun mobe 625 ppm sebesar 62,13%, dan aktivitas eradikasi biofilm 48 jam terbesar dimiliki oleh ekstrak air daun mobe 1250 ppm sebesar 74,66%.

**Kata kunci:** antibiofilm, antibakteri, ekstrak, mobe, *Staphylococcus epidermidis*.

## ABSTRACT

The skin serves as a favorable ecosystem for a diverse, complex, and dynamic range of microorganisms. *Staphylococcus epidermidis* is one such microorganism residing on the skin. This bacterium adapts to changes in the skin's microenvironment and can become an opportunistic pathogen by forming biofilms. Consequently, *S. epidermidis* is involved in general skin dysbiosis, such as acne or atopic dermatitis. This study aims to determine the antibiofilm activity of water extract, 70% ethanol extract, and silver nanoparticles (NPS) of water extract from mobe leaves against the biofilm of *S. epidermidis* bacteria. Mobe leaves were obtained from North Sumatra, and the water extract NPS was derived from previous research. The water extract was obtained by maceration, while the ethanol extract was concentrated after maceration. The antibiofilm activity test was performed using the broth microdilution method with crystal violet for biofilm staining. The data obtained were analyzed using the one-way ANOVA method.

The results of the antibiofilm activity test showed that the 70% ethanol extract, water extract NPS, and water extract of mobe leaves exhibited antibacterial activity, inhibition activity, and biofilm eradication activity against *S. epidermidis*. Based on this study, the highest antibacterial activity was observed with the 2500 ppm ethanol extract at 80.02%, the highest 24-hour and 48-hour biofilm inhibition activity was observed with the 1250 ppm water extract NPS from mobe leaves at 57.35% and 62.12%, respectively, the highest 24-hour biofilm eradication activity was observed with the 625 ppm water extract NPS from mobe leaves at 62.13%, and the highest 48-hour biofilm eradication activity was observed with the 1250 ppm water extract of mobe leaves at 74.66%.

**Keywords:** antibiofilm, antibacterial, extract, mobe, *Staphylococcus epidermidis*.