

Program Studi Sarjana Farmasi
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ABSTRAK

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Uji Daya Hambat Antibakteri Sediaan Gel Ekstrak Etanol Kulit Batang Delima (*Punica granatum* L.) terhadap Pertumbuhan *Staphylococcus aureus* ATCC 25923

Tanaman kulit batang delima (*Punica granatum* L.) merupakan salah satu tanaman di Indonesia yang dapat digunakan untuk pengobatan tradisional dan memiliki metabolit sekunder (flavonoid, tanin, fenol dan saponin) yang bersifat sebagai antibakteri. Penelitian ini bertujuan mengetahui minimal konsentrasi daya hambat yang dibuat dalam sediaan gel terhadap pertumbuhan *Staphylococcus aureus*. Metode ekstraksi yang digunakan adalah maserasi metode sumuran digunakan untuk metode uji antibakteri dengan konsentrasi ekstrak kulit batang delima 5%, 10% dan 20%. Kontrol positif menggunakan tetracycline dan kontrol negatif menggunakan DMSO. Pengujian evaluasi sediaan meliputi organoleptis, homogenitas, daya sebar, viskositas, pH dan stabilitas fisik. Evaluasi sediaan pada formulasi sediaan gel telah memenuhi persyaratan dengan SNI. Hasil uji daya hambat antibakteri pada formulasi I mempunyai daya hambat 22,78 mm, formula II memiliki daya hambat 25,84 mm dan formula III mempunyai daya hambat 27,49 mm terhadap bakteri *Staphylococcus aureus*. Data analisis menggunakan *Oneway* ANOVA dihasilkan nilai sig $0,000 < 0,005$ yang menunjukkan adanya perbedaan dari tiap formula, dilanjutkan uji *tukey* diperoleh nilai $p < 0,005$ sehingga dapat disimpulkan bahwa formulasi III mempunyai efektivitas yang paling tinggi untuk menghambat pertumbuhan bakteri *Staphylococcus aureus* daripada formula I dan III.

Kata kunci : Antibakteri, Ekstrak Kulit Batang Delima, Gel, *Staphylococcus aureus*, ANOVA

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ABSTRACT

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Antibacterial Activity Test of Ethanol Extract Gel of Pomegranate Bark (*Punica granatum* L.) Against *Staphylococcus aureus* Growth ATCC 25923

The bark of pomegranate (*Punica granatum* L.) is a plant in Indonesia traditionally used for medicinal purposes and contains secondary metabolites such as flavonoids, tannins, phenols, and saponins, which have antibacterial properties. This study aimed to determine the minimum inhibitory concentration of a gel formulation containing pomegranate bark extract against the growth of *Staphylococcus aureus*. The extraction method used was maceration, and the antibacterial testing was conducted using the well diffusion method with pomegranate bark extract concentrations of 5%, 10%, and 20%. Tetracycline was used as a positive control, and DMSO as a negative control. The gel formulations were evaluated for organoleptic properties, homogeneity, spreadability, viscosity, pH, and physical stability, all of which met the SNI (Indonesian National Standard) requirements. The antibacterial activity test results showed that formula I had an inhibition zone of 22.78 mm, formula II had 25.84 mm, and formula III had 27.49 mm against *Staphylococcus aureus*. Data analysis using Oneway ANOVA indicated a significant difference between the formulations ($p < 0.005$). Further Tukey's test results confirmed that formula III had the highest effectiveness in inhibiting the growth of *Staphylococcus aureus* compared to formulas I and II.

Keywords: *Antibacterial, Pomegranate Bark Extract, Gel, Staphylococcus aureus, ANOVA*