ABSTRAK
EFEKTIFITAS EKSTRAK ETANOL DAUN POHON PULAI (*Alstonia scholaris*) DALAM MENGHAMBAT BAKTERI *STREPTOCOCCUS MUTANS*

Yoga Dwi Putra[1], Ariffialdi Nurhidayatulloh[2] , Fadli Sukandiarsyah[3]

Politeknik ʿAisyiyah Pontianak

pyoga0941@gmail.com

Streptococcus mutans merupakan bakteri utama penyebab karies gigi. Penggunaan bahan alam sebagai antibakteri alternatif terus dikembangkan, salah satunya daun pulai (Alstonia scholaris) yang mengandung senyawa metabolit sekunder seperti alkaloid, flavonoid, tanin, dan terpenoid. Penelitian bertujuan untuk mengetahui efektivitas ekstrak etanol daun pulai (Alstonia scholaris) dalam menghambat pertumbuhan bakteri Streptococcus mutans. Penelitian ini menggunakan desain quasi experimental dengan metode difusi cakram. Variabel bebas berupa ekstrak etanol daun pulai konsentrasi 25%, 35%, dan 45%, sedangkan variabel terikat berupa diameter zona hambat bakteri Streptococcus mutans. Setiap kelompok perlakuan dilakukan sebanyak 9 kali pengulangan. Data dianalisis menggunakan uji Shapiro-Wilk, Levene Test, One Way ANOVA, dan Post Hoc Bonferroni. Hasil penelitian menunjukkan rata-rata diameter zona hambat pada konsentrasi 25%, 35%, dan 45% berturut-turut sebesar 9,31 mm, 9,66 mm, dan 10,35 mm, sedangkan kontrol positif ciprofloxacin sebesar 23,81 mm. Hasil Uji One Way ANOVA menunjukkan terdapat perbedaan yang signifikan antar kelompok perlakuan (p=0,000). Hasil uji Post Hoc Bonferroni menunjukkan tidak terdapat perbedaan signifikan antara konsentrasi 25%, 35%, dan 45% (p>0,05). Kesimpulan penelitian ini adalah ekstrak etanol daun pulai (Alstonia scholaris) mampu menghambat pertumbuhan bakteri Streptococcus mutans, namun efektivitasnya masih lebih rendah dibandingkan ciprofloxacin. Konsentrasi 25% telah menunjukkan aktivitas antibakteri yang setara dengan konsentrasi yang lebih tinggi.

Kata Kunci: Alstonia scholaris, Antibakteri, Daun pulai, difusi cakram Streptococcus mutans.

PERPUSTAKAAN POLITEKNIK 'AISYIYAH PONTIANAK

ABSTRACT

EFFECTIVENESS OF ETHANOL EXTRACT OF PULAI TREE (Alstonia Scholaris) LEAVES IN INHIBITING STREPTOCOCCUS MUTANS BACTERIA

Yoga Dwi Putra[1], Ariffialdi Nurhidayatulloh[2] , Fadli Sukandiarsyah[3]

Politeknik ʿAisyiyah Pontianak

pyoga0941@gmail.com

Streptococcus mutans is the main bacterium that causes dental caries. The use of natural materials as alternative antibacterial agents continues to be developed, one of which is pulai leaves (Alstonia scholaris), which contain secondary metabolites such as alkaloids, flavonoids, tannins, and terpenoids. This study aimed to determine the effectiveness of ethanol extract of pulai leaves (Alstonia scholaris) in inhibiting the growth of Streptococcus mutans. This study used a quasi-experimental design with the disc diffusion method. The independent variable was ethanol extract of pulai leaves at concentrations of 25%, 35%, and 45%, while the dependent variable was the diameter of the inhibition zone of Streptococcus mutans. Each treatment group was conducted with 9 repetitions. The data were analyzed using the Shapiro-Wilk test, Levene Test, One-Way ANOVA, and Bonferroni Post Hoc test. The results showed that the mean inhibition zone diameters at concentrations of 25%, 35%, and 45% were 9.31 mm, 9.66 mm, and 10.35 mm, respectively, while the positive control ciprofloxacin was 23.81 mm. The One-Way ANOVA test showed a significant difference among the treatment groups (p=0.000). The Bonferroni Post Hoc test showed no significant difference between the concentrations of 25%, 35%, and 45% (p>0.05). The conclusion of this study is that ethanol extract of pulai leaves (Alstonia scholaris) is able to inhibit the growth of Streptococcus mutans, but its effectiveness is still lower than ciprofloxacin. The 25% concentration has shown antibacterial activity equivalent to the higher concentrations.

Keywords: Alstonia scholaris, antibacterial, disc diffusion, Pulai leaves, Streptococcus mutans.

PERPUSTAKAAN NPP. 6171.21.0900001

POLITEKNIK 'AISYIYAH PONTIANAK