Efektivitas Gel Ekstrak Etanol Kelopak Bunga Rosela (Hibiscus Sahdariffa Linn) Dalam Menghambat Pertumbuhan Bakteri Treponema Denticola(In Vitro) = Efficacy of Gel Ethanol Extract of Roselle Calyx (Hibiscus sabdariffa Linn.) in Inhibiting the Growth of Bacteria Treponema denticola (In Vitro)

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Abstrak

Pendahuluan: Salah satu bakteri penyebab periodontitis adalah Treponema denticola. Untuk perawatan penyakit periodontal diperlukan aplikasi terapi topikal antibakteri tambahan untuk mempercepat penyembuhan dibanding hanya dengan terapi tunggal seperti kuretase. Ekstrak tanaman rosela (Hibiscus sabdariffa Linn.) memiliki khasiat antibakteri yang dapat melawan bakteri Gram negatif seperti Treponema denticola. Dalam upaya pengembangan bentuk sediaan, ekstrak etanol kelopak bunga rosela dibuat dalam bentuk sediaan gel.

Tujuan: Mengetahui efektivitas gel ekstrak etanol kelopak bunga rosela (Hibiscus sabdariffa Linn.) sebagai antibakteri terhadap Treponema denticola.

Metode: Uji zona hambat dilakukan dengan meletakkan cakram kertas yang dipaparkan gel ekstrak etanol kelopak bunga rosela 10%, 15%, 25%, kontrol positif, dan kontrol negatif di atas medium mueller-hinton agar yang telah diinokulasi bakteri Treponema denticola lalu diinkubasi dalam waktu 6 jam dengan suhu 37^oC pada kondisi anaerob. Uji total plate count dilakukan dengan menghitung jumlah koloni Treponema denticola yang masih hidup setelah dipaparkan dengan gel ekstrak etanol kelopak bunga rosela 10%, 15%, 25% serta kontrol positif dan kontrol negatif.

Hasil: Gel ekstrak etanol kelopak bunga rosela konsentrasi 15% dan 25% menunjukkan efek zona hambat terhadap bakteri Treponema denticola. Pada uji total plate count, gel ekstrak etanol kelopak bunga rosela (Hibiscus sabdariffa Linn.) dengan konsentrasi 10%, 15%, dan 25% menunjukkan pengurangan jumlah koloni bakteri Treponema denticola.

Kesimpulan: Gel ekstrak etanol kelopak bunga rosela (Hibiscus sabdariffa Linn.) konsentrasi 25% terbukti paling efektif dalam menghambat pertumbuhan bakteri Treponema denticola ATCC 33520.
.....Introduction: One of the bacteria that causes periodontitis is Treponema denticola. For the treatment of periodontal disease, an additional antibacterial therapy by topical application to accelerate healing is needed rather than a single therapy such as curettage. The ethanol extract of the rosella plant (Hibiscus sabdariffa Linn.) has an antibacterial agent that can against Gram-negative bacteria such as Treponema denticola. In an effort to develop the dosage form, ethanol extract of roselle calyx was made in gel form.

Objective: To investigate the efficacy of gel ethanol extract of roselle calyx (Hibiscus sabdariffa Linn.) as an antibacterial against Treponema denticola.

Methods: Inhibition zone test was carried out by placing paper discs exposed with 10%, 15%, 25% rosella calyx extract gel ethanol, positive control, and negative control on the mueller-hinton agar medium which had been inoculated with T. denticola bacteria and then incubated within 6 hours with a temperature of 37^oC in anaerobic conditions. Total plate count test is done by counting the number of T. denticola colonies that are still alive after being exposed with 10%, 15%, 25% rosella calyx extract gel as well as positive and negative controls.

Result: The gel ethanol extract of roselle calyx (Hibiscus sabdariffa Linn.) concentration of 15% and 25% showed the effect of inhibitory zones on the bacterium Treponema denticola. In the total plate count test, gel ethanol extract of roselle calyx (Hibiscus sabdariffa Linn.) with a concentration of 10%, 15%, and 25% showed reduction in the number of Treponema denticola colonies.

Conclusion: The gel ethanol extract of roselle calyx (Hibiscus sabdariffa Linn.) concentration of 25% was proven to be the most effective in inhibiting the growth of the bacterium Treponema denticola ATCC 33520.<i/>