Efektivitas Gel Ekstrak Etanol Kelopak Bunga Rosela (Hibiscus sabdariffa Linn.) terhadap Bakteri Streptococcus sanguinis penyebab Periodontitis (in vitro) = Effectiveness of Roselle Calyx (Hibiscus sabdariffa Linn.) Ethanol Extract Gel against Streptococcus sanguinis Bacteria Causing Periodontitis (in vitro)

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Abstrak

Latar Belakang: Periodontitis disebabkan oleh infeksi mikroba sepertiStreptococcus sanguinisyang mengganggu respon imun dan integritas jaringan pendukung gigi.Ekstrak etanol kelopak bunga rosela (Hibiscus sabdariffa Linn.) memiliki kandungan antimikrobial terhadap bakteri Gram-positif seperti S. sanguinis. Untuk mengembangkan bentuk sediaan, dibuat gel ekstrak etanol kelopak bunga rosela.Tujuan: Mengetahui efektivitas antibakteri gel ekstrak etanol kelopak bunga rosela terhadap S. sanguinis. Metode: Studi in vitro metode difusi agar yang mengukur zona hambat (mm) gel rosela 10%, 15%, dan 25% yang dipaparkan pada agar Mueller Hinton terinokulasi bakteri S. sanguinis, diinkubasi 6 jam, serta metode total plate count (CFU/mL) untuk menghitung jumlah koloni hidup bakteri S. sanguinis setelah terpapar gel rosela 10%, 15%, dan 25%. Kontrol positif yaitu gel klorheksidin 0,2% dan kontrol negatif yaitu gel basis tanpa zat aktif. Hasil: Zona hambat gel ekstrak etanol kelopak bunga rosela konsentrasi 15% dan 25% berbeda bermakna dibandingkan kontrol (p<0,05), gel konsentrasi 10% tidak menghasilkan zona hambat. Ketiga konsentrasi gel secara signifikanmenurunkan jumlah koloni bakteri dibandingkan kontrol (p<0,05). Efek penghambatan terbesar terdapat pada gel konsentrasi 25%. Kesimpulan: Gel ekstrak etanol kelopak bunga rosela memiliki efek hambat terhadap bakteri S. sanguinis. <hr />
Background: Periodontitis is caused by microbial infection, such as Streptococcus sanguinisthat disturbs immune response and the integrity of tooth-supporting tissue. Roselle (Hibiscus sabdariffa Linn.) calyx ethanol extract has antibacterial properties against Gram-positive bacteria, including S. sanguinis. In order to develop the dosage form, roselle calyx ethanol extract gel was made. Objective:To observe the antibacterial effectiveness of roselle calyx ethanol extract gel against S. sanguinis. Method: in vitrostudy using disk diffusion method which measures clear zone of inhibition (mm)of 10%, 15%, and 25% roselle gel applied on Mueller Hinton agar inoculated with S. sanguinis, incubated for 6 hours, and total plate count method which counts the number of living S. sanguiniscolonies (CFU/mL)after being exposed to 10%, 15%, and 25% roselle gel. Positive control is 0.2% chlorhexidine gel and negative control is gel without active substances.Result: Inhibitory zones of 15% and 25% roselle gel have significant differences compared controls (p<0.05), 10% roselle gel did not show inhibitory zones.All three concentrations of gel significantly reduced the number of colonies compared to controls (p<0.05). Highest inhibitory effect was observed in 25% roselle

gel.Conclusion: roselle calyx ethanol extract gel showed inhibitory effect against S. sanguinis.</p>