

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)

Nabila Xaviera, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20499547&lokasi=lokal>

Abstrak

Latar Belakang: Periodontitis disebabkan oleh infeksi mikroba seperti *Streptococcus sanguinis* yang mengganggu respon imun dan integritas jaringan pendukung gigi. Ekstrak etanol kelopak bunga rosela (*Hibiscus sabdariffa* Linn.) memiliki kandungan antimikrobal 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 signifikan menurunkan 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*.

Background: Periodontitis is caused by microbial infection, such as *Streptococcus sanguinis* that 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 vitro* study 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. sanguinis* colonies (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*.