

Universitas Ngudi Waluyo
Program Studi S1 Farmasi, Fakultas Kesehatan
Skripsi, September 2024
Ulfa Cahyani
051201054

**UJI AKTIVITAS ANTIBAKTERI KOMBINASI EKSTRAK DAUN
NANGKA (*Artocarpus heterophyllus* L.) DAN DAUN SIRSAK (*Annona
muricata* L.) TERHADAP BAKTERI *Propionibacterium acnes***

ABSTRAK

Latar Belakang: Daun nangka dan daun sirsak mengandung metabolit sekunder dengan aktivitas antibakteri terhadap *Propionibacterium acnes*, bakteri penyebab jerawat. Kombinasi keduanya digunakan karena efek antibakteri tunggal daun sirsak kurang poten. Tujuan penelitian untuk menganalisis aktivitas antibakteri kombinasi ekstrak daun nangka dan sirsak terhadap bakteri *Propionibacterium acnes*.

Metode: Jenis penelitian ini adalah eksperimental diawali dengan ekstraksi metode maserasi dengan pelarut etanol 96%, dibuat dengan perbandingan 1:1, 1:2, dan 2:1 dengan konsentrasi 5%, 10%, 15%, 20%, dan 25%. Kontrol positif menggunakan disk doksisisiklin dan kontrol negatifnya adalah DMSO. Uji aktivitas antibakteri menggunakan metode difusi cakram. Analisis data menggunakan uji *Kruskal Wallis Test*.

Hasil: Daun nangka dan sirsak mengandung metabolit sekunder yaitu flavonoid, saponin, tanin, alkaloid, dan fenolik. Zona hambat rata-rata kombinasi ekstrak daun nangka dan daun sirsak dengan perbandingan 1:1, 1:2, dan 2:1 terhadap bakteri *Propionibacterium acnes* konsentrasi 5% secara berturut-turut (3,65 mm, 3,77 mm, 4,00 mm), Konsentrasi 10% (4,17 mm, 5,14 mm, 5,37 mm), Konsentrasi 15% (5,71 mm, 5,41 mm, 5,81 mm), Konsentrasi 20% (5,79 mm, 5,84 mm, 6,94 mm), Konsentrasi 25% (7,41 mm, 7,72 mm, 8,55 mm). Hasil SPSS uji *Kruskal Wallis Test*, ekstrak kombinasi yaitu nilai *P-value* >0,05 (tidak terdapat perbedaan signifikan).

Kesimpulan: Tidak terdapat perbedaan signifikan pada aktivitas antibakteri kombinasi ekstrak daun nangka dan daun sirsak dengan perbandingan 1:1, 1:2, dan 2:1 dengan nilai *P-value* 0,269 (*P* >0,05). Kombinasi ekstrak daun nangka dan daun sirsak yang paling baik adalah pada konsentrasi 25% dengan perbandingan 2:1.

Kata Kunci: Daun Nangka, Daun Sirsak, Antibakteri, *Propionibacterium acnes*, *Kruskal Wallis*

Ngudi Waluyo University
Undergraduate Pharmacy Study Program, Faculty of Health
Thesis, September 2024
Ulfa Cahyani
051201054

**TESTING THE ANTIBACTERIAL ACTIVITY OF THE COMBINATION
OF JACKFRUIT LEAVES EXTRACT (*Artocarpus heterophyllus* L.) AND
SOURSOP LEAVES (*Annona muricata* L.) AGAINST THE BACTERIA
*Propionibacterium acnes***

ABSTRACT

Background: Jackfruits leaves and soursop leaves contain secondary metabolites with antibacterial activity against *Propionibacterium acnes*, the bacteria that cause acne. The combination of the two is used because the single antibacterial effect of soursop leaves is less potent. The purpose of the study was to analyze the entibacterial activity of a jackfruit leaf extract and soursop against *Propionibacterium acnes*.

Method: This type of research is experimental, starting with extraction by the maceration method with 96% ethanol solvent, made in a ratio of 1:1, 1:2, and 2:1 with concentrations of 5%, 10%, 15%, 20%, and 25%. The positive control used a doxycycline disk and the negative control was DMSO. Antibacterial activity test using the disc diffusion method. Data analysis test using *Kruskal Wallis Test*.

Results: Jackfruit and soursop leaves contain secondary metabolites, namely flavonoids, saponins, tannins, alkaloids, and phenolics. The average inhibition zone of the combination of jackfruit leaf extract and soursop leaf with a ratio of 1:1, 1:2, and 2:1 against *Propionibacterium acnes* bacteria was 5% (3.65 mm, 3.77 mm, 4.00 mm), 10% concentration (4.17 mm, 5.14 mm, 5.37 mm), 15% concentration (5.71 mm, 5.41 mm, 5.81 mm), 20% concentration (5.79 mm, 5.84 mm, 6.94 mm), 25% concentration (7.41 mm, 7.72 mm, 8.55 mm). The results of the SPSS test of the Kruskal Wallis Test, the combination extract was a P-value of >0.05 (there was no significant difference).

Conclusion: There is no significant difference in the antibacterial activity of the combination of jackfruit and soursop leaf extracts with a ratio of 1:1, 1:2, and 2:1 with a *P-value* of 0.269 ($P > 0.05$). The best combination of jackfruit and soursop leaf extracts is at a concentration of 25% with a ratio of 2:1.

Keywords: *Jackfruits leaves, Soursop leaves, Antibacterial, Propionibacterium acnes, Kruskal wallis*