

ABSTRACT

Infectious diseases are still a major problem in many developing countries, including indonesia. Infectious agents can be viruses, parasites, fungi, and bacteria. One of the causes of infectious diseases is *Propionibacterium acnes*. This study aims to determine the antibacterial activity of betel leaf extract and starfruit leaf against *Propionibacterium acnes* based on the diameter of the inhibition zone. The concentrations of the extracts used were 5%, 10%, and 15%. For the positive control, Erythromycin was used, and the negative control was 10% DMSO. Extraction was carried out by maceration by soaking 250 grams of betel and starfruit leaf powder in 500 ml of 96% ethanol. The filtrate from the maceration was filtered, then evaporated in a rotary evaporator. Produces a thick extract in betel leaf as much as 8 grams, and in starfruit leaf as much as 10 grams. The extract obtained was then tested for its antibacterial activity using *Nutrient agar* media by well diffusion. The results obtained showed the presence of antibacterial activity in each filter, namely 5%, 10% and 15% betel leaf extract, respectively, of 6.6 mm; 8,6 mm and 11,3 mm. Meanwhile, in 5% , 10% and 15% starfruit leaf extract, respectively, they were 3,6 mm; 5,3 mm and 6,6 mm. Positive control of 24,6 mm erythromycin and negative control with 10% DMSO solvent did not show any antibacterial activity. From the results of the study, it was also found that the concentration of 15% in both extracts had the highest antibacterial activity in inhibiting the growth of *Propionibacterium acnes*.

Keywords: Antibacterial, betel leaves and starfruit leaves, *Propionibacterium acnes*, antibacterial, inhibition, well diffusion

ABSTRAK

Penyakit infeksi masih menjadi masalah utama di berbagai negara berkembang, termasuk Indonesia. Agen infeksi dapat berupa virus, parasit, jamur, dan bakteri. Salah satu penyebab penyakit infeksi adalah bakteri *Propionibacterium acnes*. Penelitian ini bertujuan untuk mengetahui aktivitas antibakteri ekstrak daun sirih dan daun belimbing wuluh terhadap *Propionibacterium acnes* berdasarkan diameter zona hambat. Konsentrasi ekstrak yang digunakan yaitu 5%, 10%, dan 15%. Untuk kontrol positif yang digunakan adalah antibiotik Eritromisin, dan kontrol negatif yang digunakan adalah DMSO 10%. Ekstraksi dilakukan secara maserasi dengan merendam 250gram serbuk daun sirih dan daun belimbing wuluh dalam 500 ml etanol 96%. Filtrat hasil maserasi disaring kemudian diuapkan didalam *rotary evaporator*. Menghasilkan ekstrak kental daun sirih sebanyak 8 gram, dan dalam daun belimbing wuluh sebanyak 10 gram. Ekstrak yang diperoleh kemudian diuji aktivitas antibakterinya menggunakan media *nutrient agar* dengan cara difusi sumuran. Hasil yang diperoleh menunjukkan adanya aktivitas antibakteri pada masing-masing ekstrak yaitu ekstrak daun sirih 5%, 10% dan 15% berturut-turut sebesar 6,6 mm; 8,6 mm dan 11,3 mm. Sedangkan dalam ekstrak daun belimbing wuluh 5% ,10% dan 15% berturut-turut sebesar 3,6 mm; 5,3 mm dan 6,6 mm. Kontrol positif erythromycin sebesar 24,6 mm dan kontrol negatif dengan pelarut DMSO 10% tidak menunjukkan adanya aktivitas antibakteri. Dari hasil penelitian ini disimpulkan bahwa konsentrasi 15% pada kedua penyari memiliki aktivitas antibakteri tertinggi dalam menghambat pertumbuhan *Propionibacterium acnes*.

Kata Kunci : Antibakteri, Daun Sirih dan Daun Belimbing Wuluh, *Propionibacterium acnes*, daya hambat, difusi sumuran

