

ABSTRACT

ANTIBACTERIAL ACTIVITY TEST OF METHANOL EXTRACT OF STARFRUIT LEAF (*Averrhoa carambola L*) USING *ULTRASONIC ASSISTED EXTRACTION* METHOD ON THE GROWTH OF *Streptococcus pyogenes* *IN VITRO*

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Background : *Streptococcus pyogenes* causes skin infections that are both invasive and non-invasive. Starfruit (*Averrhoa carambola L*) can be used as an alternative to reduce the high incidence of antibiotic resistance. Modern *Ultrasonic Assisted Extraction* methods have many advantages compared to conventional extraction methods, especially in inhibiting bacterial growth activity. This study aims to determine the antibacterial activity of methanol extract of starfruit leaf (*Averrhoa carambola L*) on the growth of *Streptococcus pyogenes*.

Methods : This research is an experimental study to determine the antibacterial effect of methanol extract of starfruit leaf by *Ultrasonic Assisted Extraction* method at concentrations of 6,25%, 12,5%, 25%, 50%, 100% (*Averrhoa carambola L*) against *Streptococcus pyogenes*.

Results : The results showed that there was antibacterial activity of the methanol extract of starfruit leaves (*Averrhoa carambola L*) with the average diameter of the inhibition zones obtained being 11.48 mm, 13.00 mm, 14.66 mm and 16.10 mm which were included in the strong category.

Conclusion : There is antibacterial activity in the methanol extract of starfruit leaf (*Averrhoa carambola L*) against the growth of *Streptococcus pyogenes*.

Keyword : *Antibacterial, Averrhoa carambola L, Ultrasonic Assisted Extraction, Streptococcus pyogenes*

ABSTRAK

UJI AKTIVITAS ANTIBAKTERI EKSTRAK METANOL DAUN BELIMBING MANIS (*Averrhoa carambola* L) MENGGUNAKAN METODE *ULTRASONIC ASSISTED EXTRACTION* TERHADAP BAKTERI *Streptococcus pyogenes* SECARA *IN VITRO*

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Latar Belakang : *Streptococcus pyogenes* menyebabkan penyakit infeksi kulit yang bersifat inasif maupun non-invasif. Tanaman belimbing manis (*Averrhoa carambola* L) dapat digunakan sebagai alternatif untuk mengurangi tingginya kejadian resistensi akibat antibiotik. Metode ekstraksi modern *Ultrasonic Assisted Extraction* memiliki banyak kelebihan dibandingkan dengan metode ekstraksi konvensional terutama dalam menghambat aktivitas pertumbuhan bakteri. Penelitian ini bertujuan untuk mengetahui aktivitas antibakteri ekstrak metanol daun belimbing manis (*Averrhoa carambola* L) terhadap pertumbuhan bakteri *Streptococcus pyogenes*.

Metode : Penelitian ini adalah penelitian eksperimental untuk mengetahui efek antibakteri dari ekstrak metanol daun belimbing manis dengan metode ekstraksi sonikasi pada konsentrasi 6,25%, 12,5%, 25%, 50%, 100% (*Averrhoa carambola* L) terhadap bakteri *Streptococcus pyogenes*.

Hasil : Hasil penelitian menunjukkan adanya aktivitas antibakteri ekstrak metanol daun belimbing manis (*Averrhoa carambola* L) dengan rerata diameter zona hambat yang didapatkan sebesar 11.48 mm, 13.00 mm, 14.66 mm and 16.10 mm yang termasuk kedalam kategori kuat.

Kesimpulan : Terdapat aktivitas antibakteri pada ekstrak metanol daun belimbing (*Averrhoa carambola* L) terhadap pertumbuhan *Streptococcus pyogenes*.

Kata Kunci : Antibakteri, *Averrhoa carambola* L, *Ultrasonic Assisted Extraction*, *Streptococcus pyogenes*