

ABSTRACT

THE EFFECTS OF ANTIBACTERIAL POWER OF ETHANOL EXTRACT MOUTHWASH FROM *CIPLUKAN* LEAVES (*Physalis angulata* L.) TOWARD THE BACTERIA OF *Streptococcus mutans* *In Vitro*

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ABSTRACT

Background: *Streptococcus mutans* is a bacteria which colonize in teeth surface and causes dental caries, ciplukan plants are annual herbal plants which can be found in various tropical areas over the world. Ciplukan leaves (*Physalis angulata* L.) contain polyphenols, *alkaloid*, and *flavonoid* which have a good antimicrobial activities.

Research objective: To find the influence of antibacterial power of ciplukan (*Physalis angulata* L.) extract mouthwash toward the bacteria of *Streptococcus mutans*.

Research methodology: This research is a pure laboratory experiment which use the *Streptococcus mutans* bacteria duplications. The bacteria is incubated in the ciplukan (*Physalis angulata* L.) extract mouthwash in the concentration of 5%, 10%, 15%, 20%, and 25% for 18-24 hours in the temperature of 37 degree Celcius. As its control, the basic formula of mouthwash is used as the positive control and *Chlorexidine gluconate* 0.2% is used as the negative control. The testing of antibacterial power uses the liquid dilution which is continued by using the solid dilution. The statistical analysis test applies descriptive testing.

Research findings: The research finding shows that ciplukan leaves (*Physalis angulata* L.) extract mouthwash has the Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) at the same condition in the 5% concentration.

Conclusion: Ciplukan leaves (*Physalis angulata* L.) extract mouthwash has the influence of Inhibitory concentration and Bactericidal concentration toward the bacteria of *Streptococcus mutans*.

Keywords: Ciplukan leaves (*Physalis angulata* L.), *Streptococcus mutans*, Mouthwash, Minimum Inhibitory Concentration, Minimum Bactericidal Concentration

INTISARI

PENGARUH DAYA ANTIBAKTERI OBAT KUMUR EKSTRAK ETANOL DAUN CIPLUKAN (*Physalis angulata* L.) TERHADAP BAKTERI *Streptococcus mutans* In Vitro

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Latar belakang: *Streptococcus mutans* merupakan bakteri yang berkoloni di permukaan gigi yang memiliki peranan dalam pembentukan karies gigi. Tanaman ciplukan merupakan tanaman herbal tahunan yang terdapat di berbagai daerah tropis di dunia. Daun ciplukan (*Physalis angulata* L.) kaya akan *polifenol*, *alkaloid*, dan *flavonoid* yang dilaporkan memiliki aktivitas antimikroba.

Tujuan penelitian: untuk mengetahui pengaruh obat kumur ekstrak etanol daun ciplukan (*Physalis angulata* L.) terhadap bakteri *Streptococcus mutans*.

Metode penelitian: Penelitian eksperimental murni laboratorium yang menggunakan biakan bakteri *Streptococcus mutans*. Bakteri *Streptococcus mutans* diinkubasi dengan obat kumur ekstrak etanol daun ciplukan (*Physalis angulata* L.) dalam konsentrasi 5%, 10%, 15%, 20% dan 25% selama 18-24 jam dalam suhu 37°C, sebagai kontrol digunakan formula dasar obat kumur sebagai kontrol positif dan *Chlorhexidine gluconate* 0,2% sebagai kontrol negatif. Uji daya antibakteri menggunakan metode dilusi cair yang kemudian dilanjutkan dengan dilusi padat. Uji analisis statistik menggunakan uji deskriptif.

Hasil penelitian: hasil penelitian menunjukkan bahwa obat kumur ekstrak etanol daun ciplukan (*Physalis angulata* L.) memiliki kadar hambat minimal (KHM) dan kadar bunuh minimal (KBM) pada konsentrasi yang sama yaitu 5%.

Kesimpulan: obat kumur ekstrak etanol daun ciplukan (*Physalis angulata* L.) memiliki pengaruh kadar hambat dan kadar bunuh terhadap bakteri *Streptococcus mutans*.

Kata kunci: Daun ciplukan (*Physalis angulata* L), *Streptococcus mutans*, Obat Kumur, Kadar Hambat Minimal, Kadar Bunuh Minimal