

Efektivitas Paparan Propolis Gel dalam Menghambat Pertumbuhan Bakteri *Aggregatibacter actinomycetemcomitans* dan *Fusobacterium nucleatum* = Effectiveness of Propolis Gel Exposure in Inhibiting the Growth of *Aggregatibacter actinomycetemcomitans* and *Fusobacterium nucleatum* Bacteria

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Abstrak

Latar Belakang: Periodontitis merupakan salah satu penyakit kesehatan gigi dan mulut yang paling sering dijumpai sering terjadi di masyarakat. Periodontitis disebabkan oleh banyak faktor, salah satunya adalah: Penyebab penting adalah keterlibatan bakteri *Aggregatibacter actinomycetemcomitans* yang merupakan 'penanda' bakteri periodontitis yang memainkan peran dalam pengembangan kehilangan perlekatan jaringan periodontal, serta bakteri *Fusobacterium nucleatum* memiliki kemampuan untuk menggumpal di awal dan akhir kolonisasi bakteri dalam perkembangan plak sehingga bertindak sebagai jembatan bakteri. Propolis dilaporkan memiliki zat antibakteri yaitu flavonoid dan polifenol yang meningkatkan aktivitas antioksidan saliva dan menghambat penyakit periodontal. Tujuan : Menganalisis efektivitas gel propolis dalam menghambat pertumbuhan bakteri *Aggregatibacter actinomycetemcomitans* dan *Fusobacterium nucleatum*. Metode : *Aggregatibacter* Biofilm *actinomycetemcomitans* dan *Fusobacterium nucleatum* terkena propolis gel dengan konsentrasi 5mg/ml dan 10mg/ml kemudian diinkubasi selama 4 jam (fase adhesi), 12 jam (fase akumulasi aktif) dan 24 jam (fase pematangan) pada suhu 37°C. Persentase potensi Penghambatan pembentukan biofilm dinilai menggunakan uji MTT. Bakteri *Aggregatibacter actinomycetemcomitans* dan *Fusobacterium nucleatum* pada BHI . agar Letakkan paper disk yang telah terkena propolis gel dengan konsentrasi 5 mg/ml dan 10 mg/ml kemudian diinkubasi selama 4 jam, 6 jam, dan 8 jam pada suhu 37°C. Zona rintangan Pertumbuhan bakteri diukur dengan menggunakan penggaris. Kesimpulan: Pengaruh paparan propolis gel dalam menghambat pembentukan biofilm dan zona hambat bakteri *Aggregatibacter actinomycetemcomitans* dan *Fusobacterium nucleatum* berbeda dalam setiap durasi paparan dan variasi konsentrasi yang digunakan.

Background: Periodontitis is one of the most common dental and oral health diseases that often occur in the community. Periodontitis is caused by many factors, one of which is: An important cause is the involvement of the bacterium *Aggregatibacter actinomycetemcomitans* which is a 'marker' of periodontitis bacteria that plays a role in the development of periodontal tissue attachment loss, and *Fusobacterium nucleatum* bacteria have the ability to agglomerate at the beginning and end of bacterial colonization in plaque development so that it acts as a bacterial bridge. Propolis is reported to have antibacterial substances, namely flavonoids and polyphenols that increase salivary antioxidant activity and inhibit periodontal disease. Objective : To analyze the effectiveness of propolis gel in inhibiting the growth of *Aggregatibacter actinomycetemcomitans* and *Fusobacterium nucleatum* bacteria. Methods: *Aggregatibacter* Biofilm *actinomycetemcomitans* and *Fusobacterium nucleatum* were exposed to propolis gel with concentrations of 5mg/ml and 10mg/ml then incubated for 4 hours (adhesion phase), 12 hours (active accumulation phase) and 24 hours (maturation phase) at 37°C.

Percentage of potential inhibition of biofilm formation was assessed using the MTT assay. Bacteria *Aggregatibacter actinomycetemcomitans* and *Fusobacterium nucleatum* in BHI. agar Place the paper disk that has been exposed to propolis gel with a concentration of 5 mg/ml and 10 mg/ml then incubated for 4 hours, 6 hours, and 8 hours at 37°C. The zone of inhibition Bacterial growth was measured using a ruler. Conclusion: The effect of exposure to propolis gel in inhibiting the formation of biofilms and the inhibition zone of the bacteria *Aggregatibacter actinomycetemcomitans* and *Fusobacterium nucleatum* differs in each duration of exposure and variations in concentration used.