INTISARI

Periodontitis merupakan penyakit inflamasi kronis pada jaringan pendukung gigi yang dapat disebabkan oleh *Fusobacterium nucleatum*. Bakteri ini berperan dalam terbentuknya plak dan jumlahnya meningkat seiring dengan keparahan penyakit periodontitis. Propolis mengandung senyawa antibakteri, berupa flavonoid, fenol, dan terpenoid, yang dapat menghambat pertumbuhan bakteri periodontopatogen. Tujuan dari penelitian ini adalah untuk mengetahui potensi *propolis active gel (*propagel) dalam menghambat pertumbuhan bakteri *Fusobacterium nucleatum*

Penelitian ini menggunakan propagel yang dibuat dengan cara mengencerkan ekstrak propolis dan memasukkannya ke dalam *gel base* Na-CMC. Uji aktivitas antibakteri *F.nucleatum* ATCC 25586 dilakukan dengan metode turbidimetri, yaitu mengukur nilai *Optical Density* (OD) pertumbuhan bakteri *Fusobacterium nucleatum* yang direndam dalam kontrol positif (gel Aloclair®), kontrol negatif (gel Na-CMC 2%), propagel 2,5%, 5%, dan 10% pada media *Brain Heart Infusion Broth* (BHI-B). Pengukuran dilakukan pada bakteri yang telah diinkubasi selama 24 jam dengan suhu 37°C pada *anaerobic jar.* Pengujian dilakukan sebanyak lima kali pengulangan. Data hasil penelitian kemudian dianalisis menggunakan uji *one-way* ANOVA dan uji *Post Hoc Games-Howell*.

Hasil *one-way* ANOVA menunjukkan perbedaan yang signifikan antar kelompok ($p<0,05$), yang menandakan bahwa terdapat pengaruh bahan uji propagel konsentrasi 2,5%, 5%,10% terhadap pertumbuhan bakteri *F. nucleatum.* Hasil *Post Hoc Games-Howell* menunjukkan perbedaan yang signifikan antar masing-masing kelompok ($p<0,05$). Kesimpulan dari penelitian ini adalah propagel mempunyai potensi dalam menghambat pertumbuhan bakteri *Fusobacterium nucleatum* ATCC 25586.

Kata Kunci : *Fusobacterium nucleatum*, Propolis, Propagel, Antibacterial, *Optical Density*

ABSTRACT

Periodontitis is a chronic inflammatory disease of the tooth supporting tissue which can be caused by *Fusobacterium nucleatu*m. These bacteria play a role in plaque formation and their numbers increase with the severity of periodontitis. Propolis contains antibacterial compounds, in form of flavonoids, phenols and terpenoids, which can inhibit the growth of periodontopathogenic bacteria. The aim of this research is to determine the potential of propolis active gel (propagel) in inhibiting the growth of *Fusobacterium nucleatum*.

This research used propagel which was made by diluting propolis extract and inserting it into Na-CMC gel base. The antibacterial activity test of F. nucleatum ATCC 25586 was carried out using the turbidimetry method, by measuring the Optical Density of the growth of *Fusobacterium nucleatum* bacteria soaked in positive control (Aloclair® gel), negative control (2% Na-CMC gel), propagel at concentrations of 2.5%, 5%, and 10% in Brain Heart Infusion Broth (BHI-B) media. Measurements were carried out on bacteria that had been incubated for 24 hours at 37°C in anaerobic jars. The test was carried out five times repeatedly. The research data were then analyzed using the one-way ANOVA and the Post Hoc Games-Howell.

The results of one-way ANOVA showed significant differences between groups ($p<0.05$), which indicated that there was an influence of the propage test material at concentrations of 2.5%, 5%, 10% on the growth of F. nucleatum bacteria. Post Hoc Games-Howell results showed significant differences between each group ($p<0.05$). The conclusion of this research is that propagel has the potential to inhibit the growth of Fusobacterium nucleatum ATCC.

Keywords : *Fusobacterium nucleatum*, Propolis, Propagel, Antibacterial, Optical Density