

INTISARI

Enterococcus faecalis ATCC 29212 merupakan bakteri yang berperan penting dalam infeksi saluran akar selama perawatan endodontik. *Eco enzyme* kulit nanas memiliki bahan aktif seperti bromelin, flavonoid, tanin, saponin, fenol, dan asam asetat yang berperan dalam menghambat pertumbuhan bakteri. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh eksoenzim kulit nanas terhadap pertumbuhan *E. faecalis* ATCC 29212.

Time-kill Assay dilakukan dengan mencampurkan *eco enzyme* kulit nanas dengan suspensi *E. faecalis*. Setelah dipaparkan pada larutan uji dengan lama paparan 0,5, 1, 2, dan 3 jam, suspensi bakteri yang telah diberi perlakuan kemudian diinokulasikan ke dalam media BHI agar. Setelah diinkubasi selama 24 jam pada suhu 37°C, jumlah koloni kemudian dihitung. Data dianalisis menggunakan *Two-Way ANOVA* dan *Post-Hoc Tukey's Test*.

ANOVA menunjukkan adanya perbedaan yang signifikan pada jumlah koloni *E. faecalis* antar kelompok. Selain itu, ANOVA juga menunjukkan adanya interaksi yang signifikan antara durasi paparan dan jenis larutan dalam menghambat pertumbuhan bakteri. Jumlah koloni bakteri setelah paparan, *eco enzyme* menurun seiring dengan meningkatnya durasi paparan. Hal ini membuktikan bahwa *eco enzyme* kulit nanas dapat menghambat pertumbuhan *E. faecalis*. Berdasarkan *time-kill assay*, kemampuannya mulai efektif pada durasi paparan 2 jam.

Kata Kunci : *E. faecalis*, *eco enzyme*, *time-kill assay*

ABSTRACT

Enterococcus faecalis ATCC 29212 is a bacterium that plays a significant role in root canal infection during endodontic treatment. Pineapple peel eco enzyme has active ingredients such as bromelain, flavonoids, tannins, saponins, phenols, and acetic acid which play a role in inhibiting bacterial growth. The purpose of this study was to determine the effect of pineapple peel eco enzyme on the growth of *E. faecalis* ATCC 29212.

A time-kill assay was performed by mixing pineapple peel eco enzyme with *E. faecalis* suspension. After being exposed to test solutions with exposure durations of 0.5, 1, 2, and 3 hours, the treated bacterial suspension was then inoculated onto BHI agar. After incubating for 24 hours at 37°C, the number of the colony was then counted. Data were analyzed using Two-Way ANOVA and Post-Hoc Tukey's Test.

ANOVA showed a significant difference in the number of *E. faecalis* colonies among groups. In addition, ANOVA also revealed a significant interaction between the duration of exposure and type of solution in inhibiting bacterial growth. The number of bacterial colonies after eco enzyme exposure decreased as the duration of exposure increased. This evidence proved that pineapple peel eco enzyme can inhibit the growth of *E. faecalis*. Based on the time-kill assay, its ability began to be effective at the duration 2 hours of exposure.

Keywords: *E. faecalis*, eco enzyme, time-kill assay