

Probiotic Antibacterial Test of *Pediococcus pentosaceus* Isolated from Dadih in Inhibiting Periodontitis Bacteria: In Vitro Study on Bacteria *Aggregatibacter actinomycetemcomitans*

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Abstract : Introduction: Periodontitis defined as an inflammatory disease of teeth supporting tissue with irritation of specific pathogens as the main aetiology. Periodontitis can be cured by giving medical action accompanied by administration of an antibiotic, but the use of antibiotic has a side effect that can cause bacterial resistance. This side effect can be corrected by probiotic, which has antibiotic-like substance but do not have bacterial resistance effect; it makes probiotic became a promising future periodontitis medication. West Sumatran people has their own typical traditional food product made from fermented buffalo's milk called dadih, and it contained probiotics. Objectives: The aim of this study was to determine the ability of probiotic *Pediococcus pentosaceus* isolated from dadih in inhibiting the growth of bacteria *Aggregatibacter actinomycetemcomitans*. Material and Method: This was a true experimental study with post-test and control group design. This study was conducted on 36 samples of 2 treatment groups, the test group with probiotic *Pediococcus pentosaceus* isolated from dadih and the negative control group with sterile aquadest. The antibacterial effect was tested using the Kirby-Bauer disk diffusion method and calculated by measuring the zone of inhibition on MHA around paper disk using a sliding caliper with 0.5 mm accuracy. Result: The result of bivariate analysis using Independent t-test was $p=0.00$ where $p < 0.05$ means that there is a significant difference between the tested group and negative control group. Conclusion: Probiotic *Pediococcus pentosaceus* isolated from dadih are able to inhibit the growth of *Aggregatibacter actinomycetemcomitans*.

Keywords : *aggregatibacter actinomycetemcomitans*, antibacterial activities, periodontitis, probiotic *Pediococcus pentosaceus*

Conference Title : ICGDOM 2019 : International Conference on General Dentistry and Oral Microbiology

Conference Location : Bangkok, Thailand

Conference Dates : August 19-20, 2019