

**PENGARUH PROBIOTIK *Lactobacillus brevis* ISOLAT DADIH  
TERHADAP KADAR *IL-6* PADA INFLAMASI JARINGAN  
PERIODONTAL YANG DIINDUKSI BAKTERI  
*Aggregatibacter actinomycetemcomitans***

***Kajian in vivo pada *Rattus norvegicus****



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**ABSTRAK**

**Latar belakang:** *Aggregatibacter actinomycetemcomitans* adalah salah satu bakteri yang tumbuh pesat saat terjadi penyakit periodontal. Inflamasi pada jaringan periodontal menimbulkan tinggi peningkatan kadar sitokin pro-inflamasi seperti *IL-6*. Terapi *host modulation* menggunakan probiotik dapat menjadi terapi tambahan dalam pengobatan penyakit periodontal. Dadih merupakan produk susu khas Minangkabau yang mengandung probiotik *Lactobacillus brevis*. **Tujuan:** Mengetahui pengaruh probiotik *Lactobacillus brevis* isolat dadih terhadap kadar *IL-6* pada inflamasi jaringan periodontal tikus galur Wistar (*Rattus norvegicus*) yang diinduksi bakteri *Aggregatibacter actinomycetemcomitans*. **Metode:** Penelitian ini berjenis eksperimental laboratorium *in vivo* dengan desain *pre-post test only with control group*. Sampel menggunakan tikus galur wistar (*Rattus norvegicus*) dengan jenis kelamin jantan berjumlah 20 ekor. Terdiri dari 2 kelompok yaitu: (1) kelompok normal yang tidak menerima perlakuan; (2) kelompok perlakuan yang diberi induksi bakteri *Aggregatibacter actinomycetemcomitans* selama 7 hari sebagai *pre-test* dan diberikan bakteri *Lactobacillus brevis* pada hari ke-8 hingga hari ke-12 (selama 5 hari) sebagai *post-test*. Pemeriksaan kadar *IL-6* menggunakan *Enzyme- Linked Immunosorbent Assay* (ELISA). **Hasil:** Terdapat penurunan kadar *IL-6* dengan rerata pada kelompok normal, perlakuan *pre-test*, dan perlakuan *post-test* masing-masing sebesar  $5.1548 \pm 1.4282$  ng/L,  $7.7935 \pm 0.8672$  ng/L, dan  $5.1036 \pm 0.9148$  ng/L. Hasil uji statistik *paired t-test* menunjukkan bahwa nilai  $p < 0.001$  artinya terdapat perbedaan yang signifikan antara kelompok perlakuan *pre-test* dan *post-test*. **Kesimpulan:** Probiotik *Lactobacillus brevis* isolat dadih dapat menurunkan kadar *IL-6* pada inflamasi jaringan periodontal.

**Kata kunci:** *Aggregatibacter actinomycetemcomitans*, penyakit periodontal, inflamasi, *IL-6* *Lactobacillus brevis*.

**THE EFFECT OF PROBIOTIC *Lactobacillus brevis* ISOLATED FROM DADIH ON IL-6 LEVELS IN PERIODONTAL TISSUE INFLAMMATION INDUCED BY *Aggregatibacter actinomycetemcomitans* BACTERIA**  
**An in vivo Study on *Rattus norvegicus***

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**ABSTRACT**

**Background:** *Aggregatibacter actinomycetemcomitans* is one of the bacteria that grows rapidly during periodontal disease. Inflammation in periodontal tissue increases pro-inflammatory cytokines such as IL-6. Host modulation therapy using probiotics can be an adjunct treatment for periodontal disease. Dadih is a typical Minangkabau milk product that contains the probiotic *Lactobacillus brevis*. **Objective:** To determine the effect of the probiotic *Lactobacillus brevis* dadih isolate on IL-6 levels in periodontal tissue inflammation of Wistar rats (*Rattus norvegicus*) induced by *Aggregatibacter actinomycetemcomitans* bacteria. **Method:** This study was an in vivo laboratory experimental study with a pre-post test only with control group design. The sample used 20 male Wistar rats (*Rattus norvegicus*). Consisting of 2 groups, namely: (1) a normal group that did not receive treatment; (2) a treatment group given *Aggregatibacter actinomycetemcomitans* bacterial induction for 7 days as a pre-test and given *Lactobacillus brevis* bacteria on the 8th to 12th day (for 5 days) as a post-test. Examination of IL-6 levels using Enzyme-Linked Immunosorbent Assay (ELISA). **Results:** There was a decrease in IL-6 levels with an average in the normal group, pre-test treatment, and post-test treatment of  $5.1548 \pm 1.4282$  ng/L,  $7.7935 \pm 0.8672$  ng/L, and  $5.1036 \pm 0.9148$  ng/L, respectively. The results of the paired t-test statistical test showed that the  $p < 0.001$  means there is a significant difference between the pre-test and post-test treatment groups. **Conclusion:** Probiotic *Lactobacillus brevis* isolated dadih can reduce IL-6 levels in periodontal tissue inflammation.

**Keywords:** *Aggregatibacter actinomycetemcomitans*, periodontal disease, inflammation, IL-6, *Lactobacillus brevis*.

