

## ABSTRAK

Periodontitis adalah reaksi inflamasi pada jaringan periodontal yang ditandai dengan meningkatnya sel-sel inflamasi ke daerah periodontal termasuk *Alkaline Phosphatase*. *Alkaline Phosphate* (ALP) merupakan *bio marker* penyakit periodontal karena kadarnya yang meningkat pada kasus periodontitis, Penelitian ini telah dilakukan terapi periodontitis menggunakan bahan herbal berupa gel ekstrak Ganggang coklat (*Sargassum sp*) yang diantaranya mengandung *tannin dan flavonoid* yang bersifat anti-inflamasi dan anti-bakteri yang dapat menurunkan kadar *alkaline phosphatase* dalam cairan sulkus gingiva pada tikus periodontitis.

Penelitian ini berjenis penelitian *experimental Pretest posttest only control group design*. Sampel penelitian berjumlah 36 ekor tikus wistar jantan yang di induksi bakteri *phorpyromonas gingivalis* pada bagian gingiva. Tikus dibagi menjadi dua kelompok (n=18) yaitu pemberian *metronidazole* dan ekstrak ganggang coklat. Pengambilan sampel cairan sulkus gingiva (CSG) dan pengukuran kadar ALP menggunakan spektrofotometer UV/Vis dilakukan dua kali yaitu sebelum diaplikasikan bahan dan setelah diaplikasikan bahan. Analisis data menggunakan software SPSS ver. 23

Penelitian ini menunjukkan penurunan kadar ALP setelah diberi perlakuan *metronidazole* dan gel ekstrak ganggang coklat 75%, jumlah kadar ALP normal dalam referensi adalah 53-57 U/L dan meningkat ketika terjadi inflamasi menjadi 82-83 U/L kemudian didapatkan perbedaan yang signifikan rata-rata penurunan kadar ALP dari *pre test* ke *post test* masing-masing kelompok menjadi 39-41 U/L, dan terdapat hubungan yang signifikan antara pemberian ekstrak ganggang coklat dengan penurunan kadar ALP ( $P < 0.05$ ).

Pemberian ekstrak gel ganggang coklat (*Sargassum sp*) berefek terhadap penurunan kadar *alkaline phosphatase* dalam cairan sulkus gingiva pada tikus periodontitis.

**Kata kunci** : periodontitis, *alkaline phosphatase*, *sargassum sp*

## ABSTRACT

*Periodontitis is an inflammatory reaction in the periodontal tissue characterized by an increase in inflammatory cells to the periodontal area including alkaline phosphatase. Alkaline Phosphate (ALP) is a bio marker of periodontal disease because its levels are increased in periodontitis cases. This study has conducted periodontitis therapy using herbal ingredients in the form of brown algae (Sargassum sp) extract gel which contains tannins and flavonoids which are anti-inflammatory and anti-inflammatory. bacteria that can reduce levels of alkaline phosphatase in the fluid of the gingival sulcus in periodontitis rats.*

*This research method is experimental research pretest posttest only control group design. The research sample consisted of 36 male Wistar rats that were injected with the phorpyromonas gingivalis bacteria on the gingiva. Rats were divided into two groups (n = 18), namely giving metronidazole and brown algae extract. Sampling of gingival sulcus fluid (CSG) and measurement of ALP levels using a UV/Vis spectrophotometer were carried out twice, namely before applying the material and after applying the material. Data analysis using SPSS ver. 23*

*This study showed a decrease in ALP levels after being treated with metronidazole and 75% brown algae extract gel, the normal amount of ALP levels in the reference was 53-57 U / L and increased when inflammation occurred to 82-83 U / L then a significant difference was obtained. The average reduction in ALP levels from pre test to post test for each group was 39-41 U / L, and there was a significant relationship between giving brown algae extract and a decrease in ALP levels (P <0.05).*

*It can be concluded that there is an effect of brown algae gel extract (Sargassum sp) on alkaline phosphatase levels in the fluid of the gingival sulcus in periodontitis.*

**Keywords:** *periodontitis, alkaline phosphatase, sargassum sp*