

Intisari

AKTIVITAS ANTIOKSIDAN DAN ANTI-ARTRITIS EKSTRAK METANOL *Halimeda tuna* DARI PESISIR LHOK BUBON KABUPATEN ACEH BARAT

Perairan Aceh memiliki potensi besar di bidang perikanan, salah satunya rumput laut. Rumput laut terkenal mengandung berbagai senyawa aktif kaya potensi farmakologis, seperti antioksidan dan anti artritis. Metode pengobatan artritis rematoid yang telah dikembangkan memiliki efek samping, sehingga diperlukan alternatif pengobatan lebih aman. Penelitian ini bertujuan mengetahui aktivitas antioksidan dan anti artritis pada ekstrak metanol *Halimeda tuna*. Pengujian fitokimia, meliputi flavonoid, steroid-triterpenoid, saponin, alkaloid, tanin, fenol hidrokuinon. Analisis GC-MS dilakukan untuk mengidentifikasi senyawa aktif ekstrak *Halimeda tuna*. Pengujian aktivitas antioksidan menggunakan dua metode, yaitu metode DPPH dan FRAP. Pengujian anti artritis *in vitro* dengan metode denaturasi BSA. Adapun rendemen ekstrak $0,503 \pm 0,065\%$. Pengujian fitokimia menunjukkan kandungan flavonoid, steroid, alkaloid. Analisis GC-MS menunjukkan komponen senyawa meliputi steroid, lemak beralkohol, asam lemak. Hasil pengujian aktivitas antioksidan metode DPPH memiliki nilai $IC_{50} 299,987 \pm 121,154$ ppm, serta metode FRAP dengan nilai $200,026 \pm 8,508$ $\mu\text{M/g}$. Pengujian anti artritis ekstrak *Halimeda tuna* menunjukkan $IC_{50} 877,292 \pm 209,844$ $\mu\text{g}/0.05\text{ml}$. Hasil uji statistik aktivitas antioksidan metode DPPH dan FRAP menunjukkan beda nyata ($P < 0,05$), yaitu lebih rendah dibandingkan standar vitamin C dan BHT. Aktivitas anti artritis menunjukkan beda nyata ($P < 0,05$) pada *H. tuna* dengan nilai lebih rendah dari natrium diklofenak. Ekstrak *Halimeda tuna* memiliki aktivitas antioksidan dan anti artritis, sehingga diperlukan eksplorasi lebih lanjut sebagai potensi alternatif bidang farmakologis.

Kata kunci : denaturasi, DPPH, fitokimia, FRAP, GC-MS

Abstract

ANTIOXIDANT AND ANTI-ARTRHITIC ACTIVITIES OF *Halimeda tuna* METHANOLIC EXTRACT FROM LHOK BUBON COASTAL WEST ACEH REGENCY

Aceh waters have such potential in the field of fisheries, one of which is seaweed. Seaweed is known contain various active compounds that are rich in pharmacological potentials, such as antioxidants and anti-arthritis. Rheumatoid arthritis treatment methods that have been developed have side effects, so that safer alternative treatment are needed. This study aims to determine the antioxidant and anti-arthritis activities of the methanolic extract of *Halimeda tuna*. Phytochemical tests, including flavonoids, steroid-triterpenoids, saponins, alkaloids, tannins, phenol hydroquinone. GC-MS analysis was carried out to identify the active compounds of extract. The antioxidant activities test used two methods, including DPPH and FRAP. *In vitro* anti-arthritis testing with BSA denaturation method. Extract yield was $0.503 \pm 0.065\%$. Phytochemical testing showed the content of flavonoids, steroids, alkaloids. GC-MS analysis showed that the components contained steroids, fatty alcohols, fatty acids. The results of antioxidant activities test using the DPPH method have an IC_{50} value of $299,987 \pm 121,154$ ppm, the FRAP method value of $200,026 \pm 8,508$ $\mu\text{M/g}$. Anti-arthritis testing of *Halimeda tuna* extract showed IC_{50} $877,292 \pm 209,844$ $\mu\text{g}/0,05\text{ml}$. The results of the statistical test of antioxidant activities showed a significant difference ($P < 0,05$), which were lower than standards vitamine C and BHT. The anti-arthritis activities showed significant difference ($P < 0,05$) in *H. tuna* with lower value than diclofenac sodium. The extract of *Halimeda tuna* has antioxidant and anti-arthritis activities, so further exploration is needed as an alternative potential in the pharmacological field.

Keywords: denaturation, DPPH, phytochemical, FRAP, GC-MS