

### **ABSTRAK**

Teripang *Holothuria* sp. merupakan salah satu komoditas perikanan yang memiliki nilai ekonomis yang tinggi. Teripang sangat mudah ditemukan di perairan Madura, namun belum banyak dimanfaatkan. Nutrisi yang tinggi serta senyawa bioaktif yang terkandung dapat berpotensi dijadikan sebagai kandidat obat dan pangan fungsional. Penelitian ini bertujuan untuk menentukan karakteristik morfologi dan morfometrik *Holothuria* sp., menganalisis kandungan proksimat, gambaran kandungan protein serta potensinya sebagai agen antioksidan, antiinflamasi, dan antidiabetes secara *in vitro*. Tahapan penelitian ini terdiri dari preparasi bahan baku, analisis morfometrik dan morfologi, karakterisasi kimia, pembuatan ekstraksi protein, identifikasi gambaran kandungan protein, dan *screening* aktivitas antioksidan, antiinflamasi dan antidiabetes teripang *Holothuria* sp. yang dilaksanakan di Laboratorium Bioteknologi BRIN dan Laboratorium Terpadu Universitas Trunojoyo Madura. Teripang *Holothuria* sp. memiliki kenampakan fisik berbentuk silindris hitam dengan panjang berkisar 12,94 cm. Teripang *Holothuria* sp. mempunyai kadar nutrisi yang tinggi yaitu protein sebesar 3,62%. Berat molekul protein isolat teripang berkisar 40,73-9,72 kDa, sedangkan berat molekul hidrolisat teripang terendah mencapai 4,25 kDa. Isolat dan hidrolisat protein teripang *Holothuria* sp. memiliki potensi sebagai antioksidan dengan inhibisi tertinggi pada hidrolisat 10,000 ppm sebesar 9,75%, aktivitas antiinflamasi tertinggi pada hidrolisat 10,000 ppm sebesar 98,83% dan aktivitas antidiabetes tertinggi pada hidrolisat 10,000 ppm sebesar 85,34%.

Kata Kunci: Teripang (*Holothuria* sp.), proksimat, berat molekul, antioksidan, antiinflamasi, antidiabetes.

### **ABSTRACT**

*Holothuria* sp. sea cucumber is one of the fishery commodities that have high economic values. Sea cucumber are very easy to find in Madura Island, but have not much utilization. The high nutrient content and bioactive compounds in sea cucumber that have potential as medication candidates and functional food. This study aimed to determine the characteristics morphology and morphometry of *Holothurias* sp. proximate analysis, profiling protein, and its potential as an antioxidant, anti-inflammatory, and anti-diabetic in vitro. The stages of this research were raw material preparation, morphometric, and morphological analysis, proximate analysis, making isolate, and protein hydrolyzed, profiling protein, and screening for antioxidant, anti-inflammatory and anti-diabetic activities of sea cucumber *Holothuria* sp. which was carried out at the BRIN Biotechnology Laboratory and the integrated laboratory of Trunojoyo University. *Holothuria* sp. sea cucumber has a physical look of a black cylindrical shape with a length of around 12,94 cm. *Holothuria* sp. sea cucumber high of nutritional content with a protein content reached 3,62%. The protein molecular weight of sea cucumber isolates ranges from 40,73 -9,72 kDa, while the lowest molocular weight of protein hydrolyzed reach 4,25 kDa. Isolat and hydrolyzate of *Holothuria* sp. has the potentia as an antioxidant indicated by the highest inhibition at 10,000 ppm hydrolyzate concentration of 9,75%, the highest anti-inflammatory activity at 10,000 ppm isolate at 98,8% and the highest anti-diabetic activity at 10,000 ppm hydrolzate concentration of 85,4%.

Keywords : sea cucumber (*Holothuria* sp.), proximate, molocular weight, antioxidant, anti-inflammator, anti-diabetic.