

IDENTIFIKASI SENYAWA AKTIF DAN UJI TOKSISITAS EKSTRAK SPONS LAUT *Dysidea* sp. ASAL PULAU HOGA SULAWESI TENGGARA

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INTISARI

Telah dilakukan penelitian tentang identifikasi dan uji toksisitas senyawa aktif dari ekstrak spons *Dysidea* sp. dari Perairan Pulau Hoga Sulawesi Tenggara. Penelitian ini bertujuan untuk mengidentifikasi senyawa dan melakukan uji toksisitas dari ekstrak spons *Dysidea* sp. Isolasi dilakukan dengan maserasi menggunakan pelarut metanol, selanjutnya ekstrak metanol dipartisi menggunakan pelarut *n*-heksana, etil asetat, diklorometana dan aseton. Hasil partisi kemudian diuji toksisitas dengan metode *Brine Shrimp Lethality Test* (BSLT). Fraksi paling toksik dipisahkan menggunakan kromatografi kolom dan kemudian diuji toksisitas. Identifikasi senyawa dari fraksi yang sangat toksik dilakukan dengan alat *Liquid Chromatography – High Resolution Mass Spectrometer* (LC-HRMS).

Hasil maserasi didapatkan ekstrak metanol berwarna hijau pekat dan berminyak. Hasil partisi didapatkan ekstrak-ekstrak *n*-heksana (0,24 g), etil asetat (1,50 g), diklorometana (1,21 g), aseton (0,24 g) dan metanol/air (1,91 g). Hasil uji toksisitas menunjukkan tiga fraksi memiliki sifat toksik dengan masing nilai LC_{50} yaitu *n*-heksana (768,24 $\mu\text{g/mL}$), aseton (269,77 $\mu\text{g/mL}$), metanol/air (283,33 $\mu\text{g/mL}$) dan dua fraksi memiliki sifat sangat toksik yaitu etil asetat (1,54 $\mu\text{g/mL}$) dan diklorometana (24,38 $\mu\text{g/mL}$). Fraksi etil asetat dipisahkan menggunakan kromatografi kolom dan didapatkan 17 fraksi. Fraksi tersebut diuji toksisitas dan didapatkan fraksi 11 (4,6 mg) merupakan fraksi dengan sifat sangat toksik dengan nilai LC_{50} 29,92 $\mu\text{g/mL}$. Analisis LC-HRMS mengindikasikan bahwa fraksi 11 mengandung senyawa *Codioside A*, *Capilosanane S*, *Aldisine*, *Monotriajaponide B* dan *Ceratodytol E*, serta kemungkinan dua senyawa baru.

Kata kunci : Spons laut, LC-HRMS, BSLT, *Dysidea* sp., Toksisitas

IDENTIFICATION OF ACTIVE COMPOUNDS AND TOXICITY ASSAY OF EKSTRAK OF MARINE SPONGE *Dysidea* sp. FROM HOGA ISLAND SOUTH EAST SULAWESI

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ABSTRACT

Research has been carried out on the identification and toxicity test of the active compound from the sponge extract of *Dysidea* sp. from the waters of Hoga Island, Southeast Sulawesi. This study aims to identify and to perform a toxicity test of extracts of the sponge *Dysidea* sp. Isolation was carried out by maceration using methanol as a solvent, then the methanol extract was partitioned into n-hexane, ethyl acetate, dichloromethane and acetone. The partition results were then tested for toxicity using the Brine Shrimp Lethality Test (BSLT) method. The most toxic fractions were separated using column chromatography and then tested for toxicity. Identification of compounds from the highly toxic fraction was carried out by means of Liquid Chromatography – High Resolution Mass Spectrometer (LC-HRMS).

Maceration results obtained methanol extract is dark green and oily. Partition results obtained n-hexane (0.24 g), ethyl acetate (1.5 g), dichloromethane (1.21 g), acetone (0.24 g) and methanol/water (1.91 g). The results of the toxicity test showed that the 3 fractions had toxic properties with each LC₅₀ value, namely n-hexane (768.24 µg/mL), acetone (269.77 µg/mL), methanol/water (283.33 µg/mL) and 2 fractions had very toxic properties, namely ethyl acetate (1.54 µg/mL) and dichloromethane (24.38 µg/mL). The ethyl acetate fraction was separated using column chromatography and 17 fractions were obtained. The fraction was tested for toxicity and found that fraction 11 (4.6 mg) was a fraction with very toxic properties 29.92 µg/mL. LC-HRMS analysis indicated that fraction 11 contained Codioside A, Capilosanane S, Aldisine, Monotriajaponide B and Ceratodytol E, as well as the possibility of two new compounds.

Keywords: Marine sponge, LC-HRMS, BSLT, *Dysidea* sp., Toxicity