

## INTISARI

### **IDENTIFIKASI, UJI TOKSISITAS, DAN UJI ANTIMALARIA FRAKSI ETIL ASETAT SPONS *Theonella* sp. DARI PERAIRAN BARRANG LOMPO, SULAWESI SELATAN.**

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Identifikasi, uji toksisitas, dan uji antimalaria senyawa bioaktif dari spons *Theonella* sp. perairan Barrang Lompo, Sulawesi Selatan telah dilakukan. Ekstraksi dilakukan dengan maserasi menggunakan campuran metanol:diklorometana (3:2 v/v). Fasa diklorometana dipekatkan dan diekstraksi cair-cair menggunakan etil asetat: air (1:1 v/v). Fraksi etil asetat tersebut dipisahkan dengan kromatografi kolom dengan sistem gradien kepolaran bertahap. Eluen yang digunakan berturut-turut dari *n*-heksana, *n*-heksana:diklorometana, diklorometana, diklorometana:etil asetat, etil asetat, etil asetat:metanol, dan metanol dengan perbandingan campuran 9:1, 8:2, 7:3, 5:5, 3:7, 2:8, 1:9 v/v. Uji toksisitas pada ekstrak kasar dan fraksi hasil kolom kromatografi menggunakan metode *Brine Shrimp Lethality Test* (BSLT). Fraksi yang memiliki toksisitas tinggi selanjutnya diuji antimalaria menggunakan metode penghambatan polimerisasi hematin. Fraksi yang memiliki aktivitas antimalaria dianalisis strukturnya menggunakan *Liquid Chromatography-High Resolution Electrospray Ionization Mass Spectrometry* (LC-HRESIMS).

Ekstraksi dengan etil asetat menghasilkan 1,01 gram ekstrak kasar. Uji toksisitas ekstrak kasar diperoleh nilai  $LC_{50}$  1,18ppm. Fraksi II, III, dan IV menunjukkan aktivitas toksik tinggi pada uji toksisitas dengan konsentrasi tunggal 10 ppm. Uji penghambatan polimerisasi hematin pada fraksi II, III, dan klorokuin menunjukkan nilai  $IC_{50}$  berturut-turut sebesar 0,733mg/mL, 0,369 mg/mL, dan 3,230 mg/mL. Analisis LC-MS terhadap fraksi II dan III menunjukkan bahwa fraksi II diperkirakan mengandung senyawa *spirotamide B*, *rhodopeptin C1*, *10-apo-astaxhantinal*, *tandyukisin B*, *hapaioside*, dan pada fraksi III diperkirakan mengandung *cylindricine (D, E)*, *maltophilin*, *rhodopeptin C1*, *theonellasterol I*, - *cryptoxanthin*, *swinhosterol C*.

Kata kunci : Spons *Theonella* sp., *Brine Shrimp Lethality Test*, metode penghambatan polimerisasi hematin, LC-HRESIMS.

## ABSTRACT

### **IDENTIFICATION, TOXICITY TEST, AND ANTIMALARIAL ASSAY OF ETHYL ACETATE FRACTION OF *Theonella* sp. SPONGE FROM BARRANG LOMPO SEA, SOUTH SULAWESI.**

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Identification, toxicity test, and antimalarial test of bioactive compounds from *Theonella* sp. collected in Barrang Lompo sea, South Sulawesi were done. Extraction was performed by maceration with a mixture of methanol:dichloromethane (3:2 v/v). The dichloromethane extract was then concentrated and partition by liquid-liquid extraction in ethyl acetate:water (1:1 v/v). Ethyl acetate fraction was separated by column chromatography with step gradient polarity system of eluent. Eluents used were n-hexane, n-hexane:dichloromethane, dichloromethane, dichloromethane: ethly acetate, ethyl acetate, ethyl acetate:methanol, and methanol with ratio of mixture were 9:1, 8:2, 7:3, 5:5, 3:7, 2:8, 1:9 v/v. The toxicity of crude extract and fractions of column chromatography were tested using Brine Shrimp Lethality Test (BSLT) method. Fractions which has higher toxicity then tested using hematin polymerization inhibition method for antimalarial test. Fractions containing antimalarial activity were analyzed by Liquid Chromatography – High Resolution Electrospray Ionization Mass Spectrometry (LC-HRESIMS).

Crude extract obtained from the extraction is 1.01 g and the value of Lethal Concentration 50% (LC<sub>50</sub>) is 1.18 ppm. Fraction II, III, and VIII showed high toxicty at single test concentration of 10 ppm. Hematin polimerization inhibition test revealed the fraction II, III, and chloroquin have IC<sub>50</sub> values of 0.733; 0.369; and 3.230 mg/mL, respectively. LC-MS analysis of the fraction II and III shows that fraction II might contains spirotoamide B, rhodopeptin C1, 10-apo-astaxhantinal, tandyukisin B, hapaioside, and fraction III might contains cylindricine (D, E), maltophilin, rhodopeptin C1, theonellasterol I, -cryptoxanthin, swinhosterol C.

Key word : Sponge *Theonella* sp., Brine Shrimp Lethality Test, hematin polymerization inhibition method, LC-HRESIMS.