

**ISOLASI SENYAWA ANTIBAKTERI DARI KARANG LUNAK *Sarcophyton trocheliophorum* ASAL PERAIRAN PULAU SELAYAR**

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**INTISARI**

Telah dilakukan isolasi senyawa antibakteri dari fraksi etil asetat karang lunak *Sarcophyton trocheliophorum* asal perairan Pulau Selayar, Sulawesi Selatan. Penelitian ini bertujuan untuk menguji dan mengidentifikasi aktivitas antibakteri senyawa yang didapat dari fraksi etil asetat.

Isolasi dilakukan dengan metode maserasi menggunakan pelarut metanol:diklorometana (1:1 v/v). Ekstrak kemudian dipartisi dengan campuran etil asetat–air. Fraksi etil asetat selanjutnya dipisahkan dengan kromatografi kolom silika gel menggunakan eluen n-heksana, etil asetat, dan metanol. Setiap fraksi hasil kromatografi kolom diuji aktivitas antibakterinya. Aktivitas antibakteri diuji terhadap dua bakteri Gram positif (*Bacillus subtilis* dan *Staphylococcus aureus*) dan dua bakteri Gram negatif (*Escherichia coli* dan *Vibrio cholerae*) menggunakan uji difusi cakram agar. Penentuan nilai konsentrasi hambat minimum (MIC) dan tingkat toksisitas juga dilakukan terhadap senyawa isolat. Fraksi dengan aktivitas antibakteri yang baik dipilih untuk identifikasi struktur senyawa menggunakan metode spektroskopi (IR, MS, dan NMR).

Fraksi hasil elusi dengan n-heksana : etil asetat (9:1) diketahui aktif terhadap tiga bakteri uji, yaitu: *Bacillus subtilis*, *Staphylococcus aureus*, dan *Vibrio cholerae*, dengan zona hambat masing-masing 19,58; 20,83; 19, 65 mm. Senyawa isolat menunjukkan aktivitas yang signifikan terhadap *Bacillus subtilis*, *Staphylococcus aureus*, dan *Vibrio cholerae*, dengan nilai MIC sebesar 125 µg/ml. Hasil uji toksisitas terhadap *Artemia salina* dengan metode *Brine Shrimp Lethality Test* (BSLT) menunjukkan senyawa isolat bersifat sangat toksik (LC<sub>50</sub> 17,59 ppm). Hasil identifikasi senyawa, fraksi tersebut diketahui sebagai diterpena tipe cembranoid, yaitu senyawa sarcophytoxide.

Kata kunci: isolasi, antibakteri, *Sarcophyton*, sarcophytoxide.

**ISOLATION OF ANTIBACTERIAL COMPOUND OF SOFT CORAL  
*Sarcophyton trocheliophorum* FROM SELAYAR ISLAND SEA**

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**ABSTRACT**

Isolation and identification of antibacterial compound from ethyl acetate fraction of *Sarcophyton trocheliophorum* collected near Selayar Island, South Sulawesi have been investigated. This research aim to identify antibacterial activity in ethyl acetate fractions of an extract.

Isolated compound had been obtained from ethyl acetate fraction of methanol:dichlorometane (1:1 v/v) extract, followed separation using gradient eluent n-hexane, ethyl acetate, and methanol of column chromatography. The antibacterial activity of each fraction was tested against two Gram-positive bacteria, viz. *Bacillus subtilis* and *Staphylococcus aureus*, and two Gram-negative bacteria, viz. *Escherichia coli* and *Vibrio cholerae* using the agar disk diffusion assay. Furthermore, minimum inhibitory concentration (MIC) and cytotoxic assay of isolated compound had been determined. Fraction with best antibacterial activity was selected for the structure identification. Identification of this compound was carried out based on the spectroscopy method (IR, MS and NMR).

Among the fractions, the ethyl acetate fraction eluted with n-hexane : ethyl acetate (9:1) was the most active against three tested bacteria, viz. *Bacillus subtilis*, *Staphylococcus aureus* and *Vibrio cholerae*, with inhibition zone of 19.58, 20.83, 19.65 mm, respectively. The isolate compound showed a significant activity against *Bacillus subtilis*, *Staphylococcus aureus* and *Vibrio cholerae*, with minimum inhibitory concentration (MIC) of 125 µg/ml. The result from cytotoxic assay against *Artemia salina* with Brine Shrimp Lethality Test (BSLT) methods found that isolated compound have high level of toxicity (LC<sub>50</sub> 17.59 ppm). Based on structure identification, isolated compound known as cembranoid-type diterpene, identified as sarcophytoxide.

**Key words:** isolation, antibacterial, *Sarcophyton*, sarcophytoxide