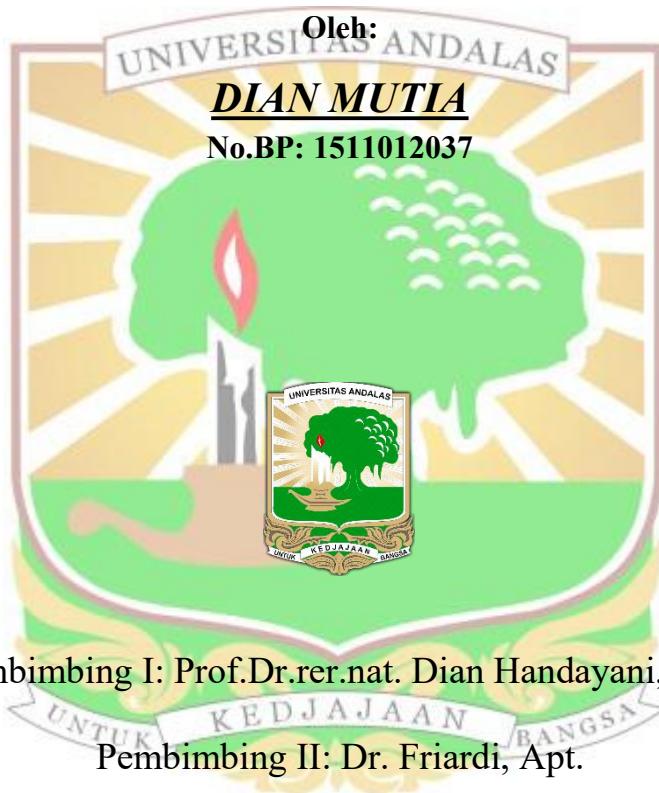


**ISOLASI JAMUR DARI SPONS LAUT *Callyspongia* sp.
DAN UJI AKTIVITAS SITOTOKSIK DENGAN
METODE *BRINE SHRIMPS LETHALITY TEST* (BSLT)**

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**ISOLASI JAMUR DARI SPONS LAUT *Callyspongia* sp. DAN UJI
AKTIVITAS SITOTOKSIK DENGAN METODE *BRINE SHRIMPS*
*LETHALITY TEST (BSLT)***

ABSTRAK

Senyawa sitotoksik merupakan “*lead compounds*” dalam pengembangan obat antikanker. Salah satu sumber senyawa sitotoksik, yaitu spons laut dan mikroba simbionya. Penelitian ini bertujuan untuk mengisolasi dan mengetahui aktivitas sitotoksik jamur dari spons laut *Callyspongia* sp. yang diperoleh dari kawasan perairan Mandeh, Pesisir Selatan, Sumatera Barat. Isolasi jamur dilakukan dengan metoda tuang pada media SDA. Jamur dikultivasi pada 100 g media beras selama 30 hari dan dimaserasi dengan pelarut etil asetat. Ekstrak etil asetat jamur diuji aktivitas sitotoksiknya dengan metode *Brine Shrimps Lethality Test*. Jamur yang memiliki $LC_{50} < 100 \mu\text{g/ml}$ diidentifikasi spesiesnya secara makroskopik, mikroskopik, dan molekuler. Kandungan metabolit sekunder utama pada ekstrak etil asetat tersebut diidentifikasi dengan skrining fitokimia dan profil KLT. Hasil penelitian didapatkan tiga belas jamur dari spons laut *Callyspongia* sp. Satu jamur memiliki akitivitas sitotoksik dengan $LC_{50} < 30 \mu\text{g/ml}$ (Cas03) dan empat jamur dengan $LC_{50} < 100 \mu\text{g/ml}$ (Cas02, Cas06, Cas07, dan Cas09). Berdasarkan identifikasi molekuler diketahui lima jamur tersebut identik dengan *Aspergillus mellinus* strain CBS 129250 (Cas02), *Penicillium citrinum* strain ercha16 (Cas03), *Aspergillus flavus* isolate LWU_31 (Cas06), *Aspergillus oryzae* strain TF7 (Cas07), dan *Aspergillus versicolor* isolate upm1 (Cas09). Profil KLT ekstrak etil asetat jamur tersebut dengan eluen n-heksana:etil asetat (1:4) memiliki nilai Rf yang bervariasi. Hasil skrining kandungan metabolit sekunder utama menunjukkan ekstrak etil asetat jamur positif mengandung senyawa fenolik (Cas06, Cas07) dan steroid (Cas02). Sedangkan ekstrak etil asetat jamur Cas03 dan Cas09 negatif mengandung senyawa alkaloid, terpenoid, steroid, flavonoid, dan fenolik. Melalui penelitian ini disimpulkan bahwa jamur dari spons laut *Callyspongia* sp. memiliki aktivitas sitotoksik dan potensi sebagai sumber senyawa antikanker.

Keywords: Spons Laut *Callyspongia* sp., Jamur Simbion, *Brine Shrimps Lethality Test*, Aktivitas Sitotoksik, *Penicillium citrinum*.

**ISOLATION OF FUNGI FROM MARINE SPONGES *Callyspongia* sp.
AND CYTOTOXICITY ACTIVITY TEST BY BRINE SHRIMPS
LETHALITY TEST METHOD (BSLT)**

ABSTRACT

Cytotoxic compounds are “lead compounds” in anticancer drugs discovery. Marine sponges and its microbial are sources of cytotoxic compounds. This research aims to isolate and determine cytotoxic activity of fungi from marine sponges *Callyspongia* sp. collected in Mandeh sea region, Pesisir Selatan, West Sumatera. Fungi isolation method is pour sponge dilution in SDA medium. Fungi were cultivated in 100 g rice media for 30 days and extracted using ethyl acetate solvent. The ethyl acetate extracts were tested for cytotoxicity using Brine Shrimps Lethality Test method. The fungi which have $LC_{50}<100\mu\text{g}/\text{ml}$ were identified based on macroscopic, microscopic, and molecular characterization. Main secondary metabolite compounds in these ethyl acetate extracts were identified with screening phytochemical and TLC profile. From the research conducted, thirteen fungi were obtained from *Callyspongia* sp. One fungi has cytotoxic activity with $LC_{50}<30\mu\text{g}/\text{ml}$ (Cas03) and four fungi with $LC_{50}<100\mu\text{g}/\text{ml}$ (Cas02, Cas06, Cas07, Cas09). Based on molecular identification, that five fungi known identical with *Aspergillus mellinus* strain CBS 129250 (Cas02), *Penicillium citrinum* strain ercha16 (Cas03), *Aspergillus flavus* isolate LWU_31 (Cas06), *Aspergillus oryzae* strain TF7 (Cas07), dan *Aspergillus versicolor* isolate upm1 (Cas09). TLC profile of that extracts showed varied Rf with n-hexana:ethyl acetate (1:4) as eluent. Through phytochemical screening showed ethyl acetate extract of fungi contain fenolic compounds (Cas06, Cas07), steroid compounds (Cas02). Meanwhile, Cas03 and Cas09 are not contain alkaloid, terpenoid, steroid, flavonoid and fenolic compounds. Through this study, it was concluded that fungi from marine sponge *Callyspongia* sp. have cytotoxic activity and potential as a source of anticancer compounds.

Keywords: Marine Sponges *Callyspongia* sp., Symbiotic Fungi, *Brine Shrimps Lethality Test*, Cytotoxic Activity, *Penicillium citrinum*.