ABSTRAK

UJI AKTIVITAS ANTIKANKER SECARA IN VITRO DARI EKSTRAK ETANOL *Padina* sp, C*aulerpa racemosa* DAN TAURIN DENGAN BSLT (*Brine Shrimp Lethality Test*) SERTA PADA KULTUR SEL LINE KANKER PARU-PARU A549

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Wilayah perairan Pesawaran Lampung memiliki potensi biota laut yang besar diantaranya sebagai penghasil makroalga. Senyawa metabolit sekunder dari makroalga dan juga taurin memiliki potensi sebagai bahan antikanker. Penelitian ini memiliki tujuan menganalisis senyawa bioaktif yang terdapat dalam ekstrak etanol 96% *Padina* sp dan *Caulerpa racemosa* yang ditemukan di perairan Pesawaran Lampung, membandingkan potensi antikanker antara taurin dan senyawa bioaktif yang terkandung dalam kedua ekstrak menggunaan metode *Brine Shrimp Lethality Test* (BSLT), serta menganalisis potensi antikanker dari ekstrak etanol 96% *Padina* sp pada kultur *cell line* kanker paru-paru A549. Dalam penelitian ini menggunakan metode diantaranya uji fitokimia, analisis *Fourier-Transform Infrared Spectroscopy* (FTIR), uji aktivitas antioksidan DPPH (*2,2-difenil-1-pikrilhidrazil*), uji toksisitas dilakukan dengan *Brine Shrimp Lethality Test* (BSLT) dan uji sitotoksik metode WST. Berdasarkan hasil penelitian, ekstrak etanol 96% *Padina* sp dan *Caulerpa racemosa* mengandung senyawa bioaktif diantarnya alkaloid, saponin, flavonoid, fenolik, tanin, terpenoid, dan juga steroid. Hasil uji *Brine Shrimp Lethality Test* (BSLT) menunjukkan kategori toksisitas rendah, dengan nilai LC_{50} ekstrak etanol 96% *Padina* sp, *Caulerpa racemosa* dan taurin berurutan 163,52 ppm; 194,14 ppm; dan 170,69 ppm yang menunjukkan potensi sebagai antikanker. Selain itu, hasil uji sitotoksisitas ekstrak etanol 96% *Padina* sp terhadap kultur sel kanker paru paru A549 diperoleh nilai IC_{50} sebesar 335,6 ppm dan menunjukkan bahwa ekstrak tersebut bersifat sitotoksik terhadap sel kanker paru paru A549 dan tergolong toksisitas rendah.

Kata kunci : Antikanker, *Brine Shrimp Lethality Test* (BSLT), *Caulerpa racemosa,* ekstrak etanol, *Padina* sp, taurin.

ABSTRACT

ANTICANCER ACTIVITY TEST IN VITRO OF ETHANOL EXTRACT OF *Padina* sp, *Caulerpa racemosa* AND TAURIN BY BSLT (Brine Shrimp Lethality Test) AND ON A549 LUNG CANCER LINE CELL CULTURE

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The Pesawaran waters of Lampung have great potential for marine biota, including as a producer of macroalgae . Secondary metabolite compounds from macroalgae and also taurine have potential as anticancer materials. This study aims to analyze bioactive compounds contained in 96% ethanolic extract of *Padina* sp and *Caulerpa racemosa* collected from Pesawaran Lampung waters, compare the anticancer potential between taurine and bioactive compounds contained in both extracts using the Brine Shrimp Lethality Test (BSLT) method, and analyze the anticancer potential of 96% ethanolic extract of *Padina* sp on A549 lung cancer cell line culture. In this study using methods including phytochemical test, Fourier-Transform Infrared Spectroscopy (FTIR) analysis, DPPH (2,2-diphenyl-1-picrylhydrazyl) antioxidant activity test, toxicity test conducted with Brine Shrimp Lethality Test (BSLT) and WST method cytotoxic test. Based on the results of the study, 96% ethanolic extract of *Padina* sp and *Caulerpa racemosa* contains bioactive compounds including alkaloids, saponins, flavonoids, phenolics, tannins, terpenoids, and steroids. The result of the Brine Shrimp Lethality Test (BSLT) test showed a low toxicity category, with LC_{50} values 96% ethanolic extract of *Padina* sp, *Caulerpa racemosa* and taurine sequentially of 163.52 ppm; 194.14 ppm; and 170.69 ppm which showed potential as anticancer. In addition, the results of the cytotoxicity test of 96% ethanolic extract of *Padina* sp against A549 lung cancer cell culture showed an IC_{50} value of 335.6 ppm and showed that the extract was cytotoxic against lung cancer cells A549 and classified as low toxicity.

Keywords: Anticancer, Brine Shrimp Lethality Test (BSLT), *Caulerpa racemosa*, ethanol extract, *Padina* sp, taurine.