

ABSTRAK

KEEFEKTIFAN EKSTRAK JAMUR ENDOFIT MANGROVE SEBAGAI ANTIBAKTERI ALAMI TERHADAP *Vibrio alginolyticus* DAN *Photobacterium damsela* spp.: STUDI DI HUTAN MANGROVE PETENGORAN, PESAWARAN, LAMPUNG

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Agen penyakit bakterial seperti bakteri *Vibrio alginolyticus* dan *Photobacterium damsela* spp. telah ditemukan menginfeksi ikan budi daya laut seperti kakap putih bahkan sampai menimbulkan kematian. Eksplorasi alam guna mencari sumber senyawa antimikroba baru terutama hewan akuatik masih terus dilakukan terutama yang bersumber dari mikroba karena keragamannya yang tinggi namun belum banyak diteliti. Mikroba banyak ditemukan berasosiasi dengan biota laut dan tumbuhan di pesisir laut, seperti mangrove. Mangrove dikenal memiliki kandungan senyawa bioaktif yang berkhasiat sebagai antibakteri begitu pula dengan jamur endofit mangrove karena adanya transfer genetik antara jamur endofit dan inang. Ekstrak jamur endofit dengan konsentrasi 500 µg/disk dan 1000 µg/disk yang diteteskan pada *blank paper disc* untuk pengujian aktivitas antibakteri menggunakan metode *disc diffusion*. Hasil pengamatan diuji secara statistik deskriptif dengan ANOVA pada level signifikansi $p < 0,05$ menunjukkan bahwa aktivitas antibakteri terbaik terhadap *V. alginolyticus* dengan kategori “sedang” didapatkan dari 4SLB1-1 ($66,22 \pm 1,52\%$) pada konsentrasi 1000 µg/disk dan 4SLB1-4 ($65,01 \pm 1,33\%$) pada konsentrasi 1000 µg/disk. Aktivitas antibakteri terbaik terhadap *P. damsela* spp. dengan kategori “kuat” didapatkan dari 4SLB1-1 ($99,18 \pm 0,53\%$) pada konsentrasi 1000 µg/disk dan 4SLB1-4 ($95,54 \pm 2,19\%$) pada konsentrasi 1000 µg/disk. Identifikasi secara molekular menunjukkan bahwa isolat 4SLB1-1 memiliki kemiripan dengan jamur *Pestalotiopsis rhizophorae* dan 4SLB1-4 yang mirip dengan jamur *Nigrospora magnoliae*.

Kata kunci : *antibakteri, endofit, mangrove, patogen, akuatik, Lampung*

ABSTRACT

THE EFFECTIVENESS OF MANGROVE ENDOPHYTE FUNGAL EXTRACT AS NATURAL ANTIBACTERIAL AGAINST *Vibrio alginolyticus* AND *Photobacterium damsela* spp.: A STUDY IN PETENGORAN MANGROVE FOREST, PESAWARAN, LAMPUNG

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Bacterial disease agents such as bacteria *Vibrio alginolyticus* and *Photobacterium damsela* spp. have been found to infect marine farmed fish such as sea bass and even cause mortality. Exploration of nature to find sources of new antimicrobial compounds, especially aquatic animals, is still being carried out, especially those originating from microbes because of their high diversity but have yet to be widely studied. Microbes are associated with marine biota and plants on the sea coast, such as in mangroves. Previously, mangroves contained bioactive compounds that have antibacterial properties as well as mangrove endophytic fungi due to genetic transfer between endophytic fungi and the host. Endophytic fungal extract with a concentration of 500 µg/disk and 1000 µg/disk was dripped on a *blank paper disc* for testing antibacterial activity using the method of *disc diffusion*. The observation results were tested descriptively statistically with ANOVA at a significance level of $p < 0.05$. Best antibacterial activity against *V. alginolyticus* in the "medium" category were 4SLB1-1 ($66.22 \pm 1.52\%$) at a concentration of 1000 µg/disk and 4SLB1-4 ($65.01 \pm 1.33\%$) at a concentration of 1000 µg/disk. Best antibacterial activity against *P. damsela* spp. in the "strong" category were 4SLB1-1 ($99.18 \pm 0.53\%$) at a concentration of 1000 µg/disk and 4SLB1-4 ($95.54 \pm 2.19\%$) at a concentration of 1000 µg/disk. Molecular identification showed that isolate 4 SLB1-1 had similarities to fungi *Pestalotiopsis rhizophorae* and 4SLB1-4 had similarity with fungi *Nigrospora magnoliae*.

Keywords: *antibacterial, endophytic, mangrove, pathogenic, aquatic, Lampung*