

## ABSTRACT

### IDENTIFICATION OF *MANGROVE Avicennia sp.* ENDOPHYTIC FUNGUS FROM LAMPUNG WATERS THAT HAVE ANTIBACTERIAL ACTIVITY AGAINST PATHOGEN BACTERIA *Aeromonas hydrophila* (Chester, 1901)

BY

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*Aeromonas hydrophila* is a pathogen that can cause mass death in various types of freshwater fish such as catfish, cyprinidae, cichlidae, rainbow trout, salmonidae, frogs, snails, and shrimp. The disease occur in a short time, which is around 1-2 weeks. Due to the harmful effects caused by infection from *A. hydrophila* bacteria, the research in antibacterial compounds from mangrove endosymbiont microbes can be a solution because these microbes can produce secondary metabolites as antibacterial compounds. The purpose of this study was to obtain isolates of endophytic fungi from the roots of the mangrove *Avicennia sp.* which had inhibitory activity against *A. hydrophila* bacteria. The endophytic fungi samples were derived from the roots of *Avicennia alba* and then isolated on malt extract agar media. The selected fungi then scaled up for extraction using the maceration method with semi polar ethyl acetate solvent. The fungi extract were used to test the inhibitory zone using the *Kirby-Bauer* method. The results obtained 5 fungal isolates that had inhibitory activity against *Aeromonas hydrophila* bacteria, which consisted of isolates WB-A02, WB-A05, WB-A06, PJ-A01 and PJ-A02. Isolate WB-A05 had the biggest inhibitory zone against *A. hydrophila*. The molecular identification showed that the isolate WB-A05 had similarity 96,59% to *Tritirachium oryzae* strain NTOU 4172.

Keywords : *Avicennia sp.*, *A. hydrophila*, endophytic fungi, identification.

## ABSTRAK

### **IDENTIFIKASI ISOLAT JAMUR ENDOFIT AKAR *MANGROVE* *Avicennia* sp. DARI PERAIRAN LAMPUNG YANG MEMILIKI AKTIVITAS ANTIBAKTERI TERHADAP BAKTERI PATOGEN *Aeromonas hydrophila* (Chester, 1901)**

Oleh

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*Aeromonas hydrophila* merupakan bakteri patogen yang dapat menyebabkan kematian massal pada berbagai jenis ikan air tawar seperti lele, cyprinidae, cichlidae, rainbow trout, salmonidae, katak, siput, dan udang. Penyakit ini terjadi dalam waktu singkat, yaitu sekitar 1-2 minggu. Efek merugikan yang ditimbulkan oleh infeksi bakteri *A. hydrophila* membuat penelitian senyawa antibakteri dari mikroba endosimbion mangrove dapat menjadi solusi karena mikroba tersebut dapat menghasilkan metabolit sekunder sebagai senyawa antibakteri. Tujuan dari penelitian ini adalah untuk mendapatkan isolat fungi endofit dari akar mangrove *Avicennia* sp. yang memiliki aktivitas penghambatan terhadap bakteri *A. hydrophila*. Sampel jamur endofit berasal dari akar *Avicennia alba* kemudian diisolasi pada media *Malt Extract Agar*. Isolat terpilih kemudian diperbanyak untuk ekstraksi menggunakan metode maserasi dengan pelarut etil asetat semi polar. Ekstrak jamur digunakan untuk menguji zona hambat menggunakan metode *Kirby-Bauer*. Hasil penelitian diperoleh 5 isolat jamur yang memiliki aktivitas penghambatan terhadap bakteri *Aeromonas hydrophila*, yang terdiri dari isolat WB-A02, WB-A05, WB-A06, PJ-A01 dan PJ-A02. Isolat WB-A05 memiliki zona hambat terbesar terhadap *A. hydrophila*. Identifikasi molekuler menunjukkan bahwa isolat WB-A05 memiliki kemiripan sekitar 96,59% dengan *Tritirachium oryzae* strain NTOU 4172.

Kata kunci : *Avicennia* sp., *Aeromonas hydrophila*, jamur endofit, identifikasi.