

水產動物弧菌之藥物感受性

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弧菌是水產動物養殖環境中重要的常在菌及病原，為了解水產動物中弧菌的藥物感受性，我們收集自台灣南部各縣市水產動物（包括白蝦、石斑、甲魚、虱目魚）所分離之弧菌共 41 株，利用紙錠擴散法配合最小抑菌濃度進行藥物感受性試驗。所分離之弧菌菌株主要對 ampicillin 具抗藥性 (18/41, 44%)，有 3 株對四環黴素類藥物具抗藥性(3/41, 7.3%)，有 4 株對磺胺劑 (sulfamethoxazole/trimethoprim; SXT) 具抗藥性 (4/41, 9.7%)，以及 4 株對 oxolinic acid 具抗藥性(4/41, 9.7%)。為探討抗藥性機制，我們將 18 株具 ampicillin 抗藥性之弧菌菌株進行 beta-lactam 類抗藥基因 (blaSHV, blaTEM, blaCTX) 之檢測，其中僅 1 株檢測出 blaTEM；另將 3 株具四環黴素抗藥性之弧菌株進行 tet 基因 (tetA-E, tetM, tetS, tetG, tetY) 檢測，其中 2 株均檢測出 tetD 與 tetM；最後將 4 株具 SXT 抗藥性弧菌株進行 integron 檢測，其中 3 株帶有 class I integron，2 株的 integron 片段大小約 1kb，含 aadA8 基因匣，另 1 株的 integron 片段大小約 2kb，含 dfrA12-orfF-aadA2 基因匣。水產動物所分離之弧菌菌株，除部分(44%) 對 ampicillin 具抗藥性外，對其他水產動物用藥則無明顯抗藥性的產生。

Antimicrobial susceptibility of *Vibrio* spp. in aquatic animals

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Abstract

Vibrio species are normal flora and important pathogens in aquaculture. To analyze antimicrobial susceptibility of *Vibrio* spp., 41 *Vibrio* isolates from aquatic animals were collected from southern Taiwan. Disk diffusion assay and minimum inhibitory concentration (MIC) were used for characterization of antibiogram of the isolates. Eighteen isolates were resistant to ampicillin (18/41, 44%), 3 isolates were resistant to tetracyclines (3/41, 7.3%), 4 isolates were resistant to sulfamethoxazole/trimethoprim(SXT) (4/41, 9.7%), and 4 isolates were resistant to oxolinic acid (4/41, 9.7%). The resistant determinants of beta-lactam drugs including blaSHV, blaTEM, and blaCTX, and those of tetracycline including tetA-E, tetM, tetS, tetG, tetY were detected by PCR.

Detection of class 1 integron was performed in SXT resistant isolates by PCR. The result showed that blaSHV was detected in 1 isolate among 18 ampicillin resistant isolates; tetD and tetM genes were simultaneously found in 2 isolates among 3 tetracycline resistant isolates. Class 1 integron was found in 3 isolates: 2 of them carried a 1kb-cassette (aadA8), and the other carried a 2kb-cassette (dfrA12-orfF-aadA2). The present study indicated that *Vibrio* isolates from aquatic animals possessed acceptable level of sensitivity to the approved antimicrobials used in aquaculture, except moderately resistant to ampicillin.