水產動物愛德華氏菌與發光菌之藥物感受性

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摘要

自嘉義、屏東、台東、台南、澎湖、基隆、新北市的水產動物所分離之愛德華氏菌與發光菌共34株，其中*Edwardsiella tarda* 16株、*Photobacterium damselae* 18株。利用紙錠擴散法配合最小抑菌濃度進行水產動物用藥之藥物感受性試驗，結果顯示無論是愛德華氏菌還是發光菌對大部分的水產動物用藥均有不錯的感受性（88.9~100%）。四環黴素類藥物在愛德華氏菌的感受性為五至六成，包括doxycycline (11/16; 69%)、oxytetracycline(9/16; 56.2%)、tetracycline (9/16; 56.2%)；而在發光菌的感受性為66.7%，包括oxytetracycline與tetracycline（12/18）。針對13株對四環黴素具抵抗性的菌株（7株為愛德華氏菌、6株為發光菌），進行四環黴素抗藥基因（*tetA-E, tetM, tetS, tetG, tetY*）的PCR檢測，全數均檢測出抗藥基因。將2株具ampicillin抵抗性的菌株進行beta-lactamase基因*blaSHV*、*blaTEM*、*blaCTX*的PCR檢測，其中1株檢出*blaTEM*。將1株具SXT抗藥性的愛德華氏菌進行integron檢測，結果帶有大小約1.2kb的class I integron，含*dfrA1-orfC*基因匣。本研究顯示，水產動物分離之愛德華氏菌與發光菌，除部分對四環黴素具抗藥性外，對其他水產動物用藥則無明顯抗藥性的產生。

Antimicrobial susceptibility of *Edwardsiella tarda* and *Photobacterium damselae* isolated from aquatic animals

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Abstract

The objective of the present study was to collect *Edwardsiella tarda* and *Photobacterium damselae* which were isolated from healthy or diseased aquatic animals in Chiayi, Pingtung, Taitung, Tainan, Penghu, Keelung, and New Taipei City, and to investigate their susceptibility to antimicrobial compounds. Thirty-four isolates including *E. tarda* (16) and *P. damselae* (18) were collected. A disk diffusion assay was used and minimum inhibitory concentrations (MIC) were calculated in order to determine the antibiogram of the isolates. Over 88.9% of all isolates were sensitive to most of the approved antimicrobials used in aquaculture. In *E. tarda* isolates, 69% of isolates were sensitive to doxycycline and oxytetracycline (11/16) and 56.2% of isolates were sensitive to tetracycline (9/16); In *P. damselae* isolates, 66.7% of isolates were sensitive to oxytetracycline and tetracycline (12/18). PCR amplification conducted on these isolates resulted in the detection of the tetracycline resistance genes *tetA-E, tetM, tetS, tetG, tetY* as well as genes responsible for resistance to beta-lactam drugs (*blaSHV, blaTEM, blaCTX*). Detection of a class 1 integron was performed on a SXT resistant isolate of *E. tarda* by PCR. The results showed that all isolates resistant to tetracycline had at least one tetracycline resistant determinant while *blaTEM* was detected in 1 isolate of *E. tarda.* A class 1 integron was also found in 1 isolate of *E. tarda* which carried a 1.2kb-cassette (*dfrA1-orfC*). The present study indicated that *E. tarda* and *P. damselae* isolates from aquatic animals possess an acceptable level of sensitivity to most of the approved antimicrobials used in aquaculture, with some of them showing moderate resistance to tetracycline.