Characterization of Vibrio vulnificus isolated from cockles (Anadara granosa): antimicrobial resistance, plasmid profiles and random amplification of polymorphic DNA analysis

ABSTRACT

Antibiotic susceptibility, plasmid profiles and random amplification of polymorphic DNA (RAPD) were used to study strains of Vibrio vulnificus isolated from cockles (Anadara granosa). Thirty-six isolates were analyzed. The prevalent biotypes were 1 (72.2% of the isolates) and 2 (27.8%). Among these, 21 strains of biotype 1 and two strains of biotype 2 contained plasmid DNA bands ranging in size from 1.4 to 9.7 MDa. Thirty-one (83.3%) were found to be resistant to one or more of the antimicrobial agents tested, however no specific correlation between antimicrobial resistance patterns and a single biotype was found. In addition, no particular plasmid profile was predictive of a particular pattern of antibiotic susceptibility. Two primers produced polymorphisms in all strains tested, producing bands ranging from 0.25 to 2.7 kb, indicating a high variability among both biotype 1 and biotype 2 of the V. vulnificus strains investigated. RAPD identity across biotypes was also observed among Vibrio vulnificus strains.

Keyword: Antimicrobial resistance; Plasmid; Random-amplified polymorphic DNA; Vibrio vulnificus