

Molecular characterization of *Streptococcus agalactiae* strains isolated from fishes in Malaysia

ABSTRACT

Aims: The aim of this study was to characterize *Streptococcus agalactiae* strains that were isolated from fishes in Malaysia using random amplified polymorphic DNA (RAPD) and repetitive extragenic palindromic PCR (REP-PCR) techniques. **Methods and Results:** A total of 181 strains of *Strep. agalactiae* isolated from red hybrid tilapia (*Oreochromis sp.*) and golden pompano (*Trachinotus blochii*) were characterized using RAPD and REP-PCR techniques. Both the fingerprinting techniques generated reproducible band patterns, differing in the number and molecular mass amplicons. The RAPD technique displayed greater discriminatory power by its production of more complex binding pattern and divided all the strains into 13 groups, compared to 9 by REP-PCR technique. Both techniques showed the availability to differentiate the genetic profiles of the strains according to their geographical location of origin. Three strains of *Strep. agalactiae* that were recovered from golden pompano showed a genetic dissimilarity from the strains isolated from red hybrid tilapia, while the strain of ATCC 27956 that recovered from bovine displayed a unique profile for both methods. **Conclusions:** Both techniques possess excellent discriminative capabilities and can be used as a rapid means of comparing *Strep. agalactiae* strains for future epidemiological investigation. **Significance and Impact of the Study:** Framework as the guideline in traceability of this disease and in the search for potential local vaccine candidates for streptococcosis in this country.

Keyword: Disease; Fish; RAPD; REP-PCR; *Streptococcus agalactiae*.