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Detection of virulence and antibiotic resistance genes in *Aeromonas* Sp in Sub-Himalayan West Bengal, India

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Aeromonas spp., abundantly found in aquaculture systems, are implicated as pathogens associated with fish and human diseases. Owing to their complexity with respect to virulence, increasing host range and rapidly evolving antibiotic resistance mechanisms, it becomes important to investigate the genetic basis and dissemination of associated genes. Biochemical characterization known as aerotype II, was used to identify 34 strains of *Aeromonas* isolates in aquaculture bodies of sub-Himalayan West Bengal. Molecular detection was carried on the basis of self designed 16S rRNA gene primers specific to *Aeromonas*. Isolates were tested phenotypically for the presence of haemolysin, protease and DNase, reported as virulence factors in motile *Aeromonas*. Corresponding genetic determinants *aer/haem* (haemolytic toxin), *aspA* (serine protease), *ascV* (Type3 secretion system) and *flaA* (polar flagella) were investigated. All isolates were found to be beta haemolytic and proteolytic whereas 73.52 % were positive for DNase. While 44.11% harboured *aer/haem* gene, 23.54% showed *ascV* gene. *aspA* was detected in 11.76% whereas 41.17 % exhibited the occurrence of *flaA* gene. *In vivo* pathogenicity of 6 virulent strains was tested in fish (*Anabas* sp.). Severe lesions and mortality was observed in 60 % and 18.2% of the fishes respectively within 7 days. A MAR index value >0.2 was detected among 14.7% of the isolates subjected to antibiotic sensitivity testing against 19 antibiotics. Presence of class I integrons was also detected in 26.5% of the strains. These findings provide greater insights of the prevalence and infectious nature of *Aeromonas* posing a threat to public health.

Biography

Dipanjita Saha has completed her graduation in Biochemistry in 1991 from Calcutta University and doctoral studies from Centre for Life Sciences, University of North Bengal in 2000. She is an Assistant Professor (stage III) in Biotechnology in University of North Bengal. She has received best presentation award in several occasions and published more than 34 papers in reputed journals. She has visited USA, France, Thailand, Egypt and UK for academic purposes.

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