

## Genetic diversity and antimicrobial resistance from *Aeromonas hydrophila* of animal, food and human origins isolated in Brazil

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Aeromonads are Gram-negative bacteria which are widely distributed in aquatic environments. *Aeromonas hydrophila* causes various intestinal and extra-intestinal diseases, from relatively mild enteritis (gastroenteritis in humans) to potentially fatal septicemia in humans and other mammals, reptiles, birds, and fish species. Their pathogenesis is multifactorial, attached with a wide variety of virulence factors. Besides their virulence, these bacteria may represent an important vehicle for maintenance of antimicrobial resistance genes on environment. With this knowledge, this study was aimed to recognize characteristics of *A. hydrophila* circulating in our ambience. There were selected 110 strains of *A. hydrophila* from human, food and animal sources isolated between 2010-2016, to proceed evaluation of antimicrobial susceptibility by disk diffusion method (CLSI 2016), and conducting Polymerase Chain Reaction for detection of genes associated with virulence factors - hemolysin (*hlyA* / *aerA*), enterotoxins (*act* / *alt*) and DNase (*exu*). 92.7% of the strains have at least one of the virulence genes studied. 20 different virulence profiles were observed among isolates. It should highlight the profile *act*, *aerA*, *alt*, *exu*, *hlyA* present in 4 strains containing all virulence markers searched. Human source strains showed greater diversity of profiles than the others. Antimicrobial resistance was observed in 46.4% of the strains. The distribution of drug resistance among the resistant strains was: AMK 5.9%, NAL 23.5%, GEN 5.9%, SXT 5.9%, 16.6% TCY, CAZ 11.8%, CIP 3.9% IPM 13.7%, CTX 13.7%, FOX 45% and NIT 3.9%. Multidrug resistance was observed in 3.6% of all isolates. The presence of virulence genes and the increasing antimicrobial resistance in *A. hydrophila* points the possibility of gene environmental exchanges and their relevance in public health.

Key words: *Aeromonas hydrophila*, Virulence, Antimicrobial Resistance