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Aeromonas hydrophila as the most common pathogen of cultured *Oreochromis niloticus* in Egypt; a molecular characterisation and pathogenicity evaluation study.

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ABSTRACT

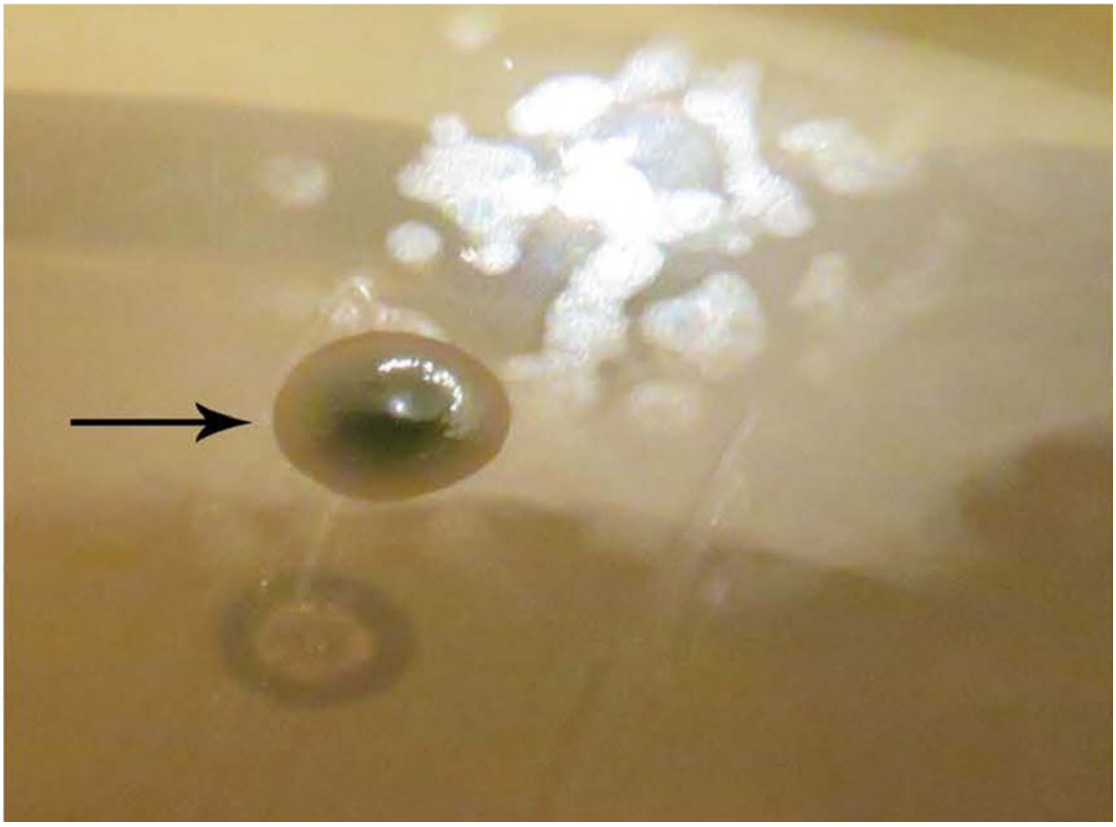
Our study was done to characterise *Aeromonas hydrophila* isolated from diseased tilapia *Oreochromis niloticus* cultured in Kafrelsheikh farms and to evaluate virulence and pathogenecity. About 200 adult fish exhibiting the onset of clinical signs were bacteriologically examined using *Aeromonas* isolation medium. The isolates were identified by 16S rRNA gene sequence analysis using species specific primers and then tested for ten virulence genes employing specific primers. Experimental challenge studies were also conducted to investigate the pathogenicity of the

recovered *A. hydrophila* strains. Thirty five isolates were identified as *A. hydrophila* based on 16S rRNA gene sequence analysis, which were also positive for presence of four virulence genes (aerolysin, lipase, cytotonic heat stable enterotoxin and haemolysin). Results showed that majority of the examined strains carried one or more virulence gene indicating higher virulence for *A. hydrophila* in infected *O. niloticus* in Kafrelsheikh fish farms. Histopathological examination showed melanomacrophage centers in visceral organs which may indicate adaptive immunity to *A. hydrophila*.

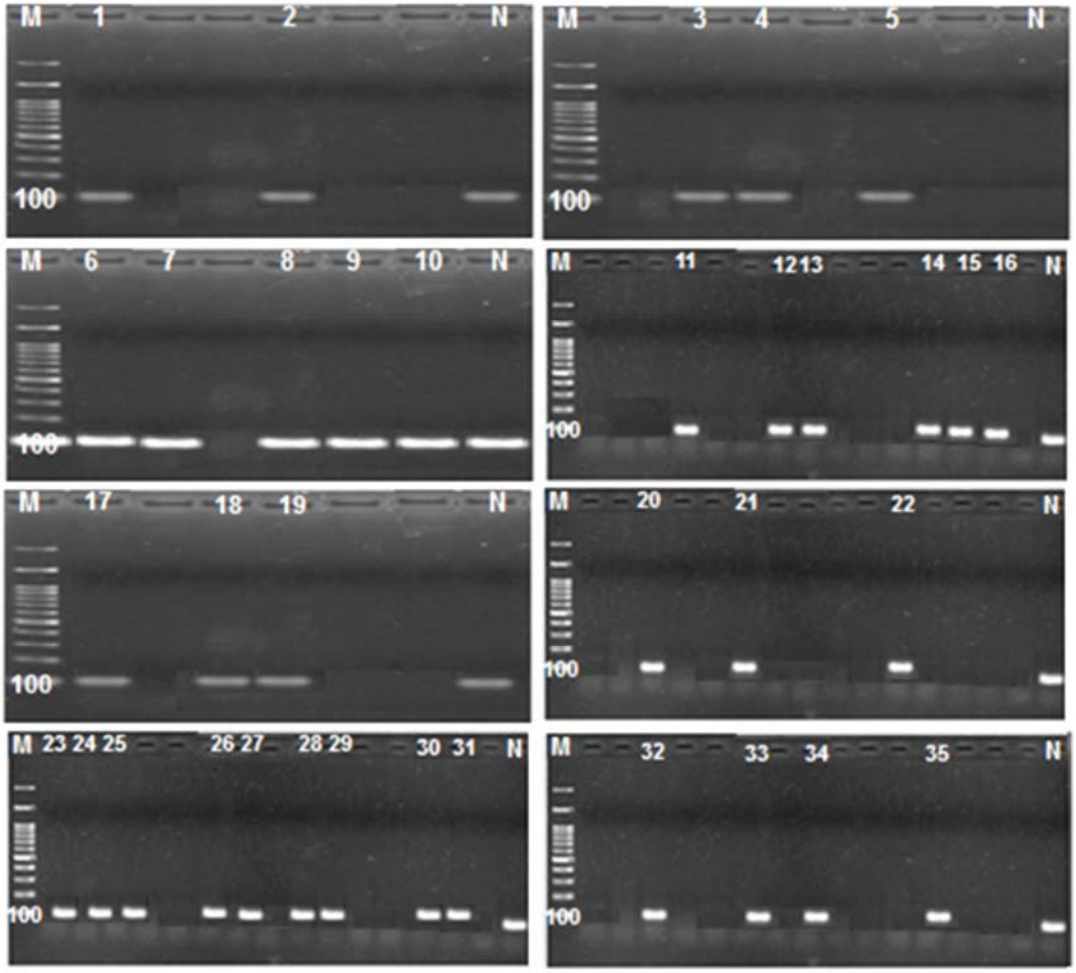
FIGURES



Tilapia (*Oreochromis niloticus*) showing a hemorrhagic patch on its abdomen.



Aeromonas hydrophila on Aeromonas Isolation Medium Base appear with the characteristic bull eye shaped colony (dark green center with light periphery).



Electrophoretic pattern of PCR products (103 bp) specific for *A. hydrophila* in 2% agarose gel stained with ethidium bromide

Lane M: 100 bp DNA ladder

Lane N: Negative control

Lane 1- 35: Positive *A. hydrophia*

BIOGRAPHY

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BVSc, Mansoura University, 2008.
MVSc, (Fish Diseases and Management), Mansoura University, 2014.
PhD, (Fish Diseases and Management), Kafrelsheikh University, 2019.

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Publications

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