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Molecular detection of some *A. hydrophila* toxins and its antibiotics resistance pattern isolated from chicken feces in Thi-Qar province, Iraq

Waffa Abdulelah Ahmed¹ and Muslim Dhafer Musa²¹University of Baghdad, Iraq²Southern Technical University, Iraq

The high isolation rate of virulent *A. hydrophila* from chicken represent an important public health concern, especially when these bacteria exhibit increased antimicrobial resistance to medically important antibiotics, so this study was conducted to isolate *A. hydrophila* from chicken feces and investigate the presence of some toxins genes and determine their antibiotics resistance profile. Chicken feces were collected from different regions, throughout Thi-Qar province south of Iraq, in period extended from end of July 2015 to beginning of January 2016. *A. hydrophila* isolates were identified by morphological, biochemical and API20E. These isolated were subjected to PCR assay for confirmation, targeting 16S RNA-23S Intergenic Spacers and for detection of important virulence genes including hemolytic toxin Aerolysin (*Aero*), heat labile enterotoxin (*Alt*) and heat stable enterotoxin (*Ast*). 12 *A. hydrophila* were isolated and identified to species level from 125 chicken fecal samples with overall incidence rate (9.6%). Screening for virulence genes revealed that 10/12 (83.4%) were positive for Aerolysin (*Aero*) gene and 9/12 (75%) for heat labile enterotoxin (*Alt*) gene, while none of these isolates were positive for heat stable enterotoxin (*Ast*) gene 0/12 (0%), the most prevalent genotype was *Aer+* *Alt+* *Ast-*. Anti biogram against 19 antibiotics revealed that, all isolates in this study showed absolute susceptibility (100%) to Gentamycin, Ofloxacin, Amikacin, Norfloxacin, Imipenem Ciprofloxacin. However, multidrug resistance recorded in all isolates of this study, 2 isolates (16.7%) were resistant to eight antibiotics including, Clindamycin, Cephalothin, Vancomycin, Ticacillin-clavulnoc acid, Ceftazidime, Cefoxitin, Trimethoprim-sulfamethaxazon, Azithromycin with multidrug resistance index (0.42) and 5/12 (41.7%) were resistance to seven antibiotics (58.4%) with MDRI (0.36), four isolates (33.4%) were resistant to six antibiotics with MDRI (0.31), while only one isolate 1/12 (8.4%) were resistant to five antibiotic with MDRI (0.26). The present study showed that detection of pathogenic *A. hydrophila* harboring important virulence genes Aerolysin and Alt with resistance to many clinically important antibiotics is a good indication that chicken feces constitute important source for pathogenic *A. hydrophila* infecting human that come in contact with chicken and spread of multidrug resistance organisms in environment.

Biography

Waffa Abdulelah Ahmed has completed her PhD from University of Baghdad, Iraq. She has worked as the Head of Department of Quality Control, Veterinary State Company, Ministry of Agriculture from 2005 to 2006. She has worked for eight years as an Assistant Professor and Scientific Researcher in Unit of Zoonotic researches (2006-2014) also in Department of Microbiology (2014-2016), College of Veterinary Medicine, University of Baghdad. She has participated in several conferences in different universities of Iraq, in many examining committees for postgraduate students in Baghdad University and other universities in Iraq. She has published more than 30 papers in reputed journals and has been serving as an Editorial Board Member of *Research Journal of Biology* and reviewed more than 100 articles in about seven journals and more than 20 theses (scientific evaluation).

waffaabduleah@yahoo.com

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