



Isolation and characterization of Oxytetracycline resistance *E. coli* in Al Muthanna Veterinary hospital using Multiplex PCR

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Abstract

Different antibiotics have used in cure and control of infections in veterinary practice, therefore, the non-prudent use can lead to the development of antibiotic resistant microorganisms. Therefore, this study was designed to Identify the presence of drug-resistant bacteria and to investigate

the prevalence of oxytetracycline resistance gene tet (A) in the isolated and in vitro antibiotic resistance *E. Coli*. A total of 53 clinical cases (37 sheep, 6 goats, 9 cow, and one cat) were presented to Al-Muthanna veterinary hospital with different clinical signs. A sterile samples were collected from these cases and cultured in different culture media. Consequently, Gram stain and biochemical tests were done for identification. The total number of isolated bacteria were 53 isolates. Ten out of 53 bacterial isolates were *E. coli* and were resistance for tetracycline and oxytetracycline. These isolates were tested to determine the prevalence of tetracycline resistance genes tet (A) using multiplex PCR. Nine out of ten *E. Coli* isolates (9/10, 90 %) were carried tetA gene. PCR amplified the tet (A) gene was done with two sets of primers targeting the tetracycline efflux gene (tetA). In conclusion, antimicrobial resistant (AMR) bacteria were identified in this study. Moreover, tetA resistance gene found in 90% of the tested resistance *E. coli*. The Authors recommend doing another future investigation that includes the high number of bacterial isolates and determines other antimicrobial genes responsible for transferring the resistance between different kinds of bacteria. Besides, antimicrobial drugs should be used wisely and prohibited providing antimicrobial products without a prescription.

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