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Molecular detection of genes (*tetM*, *tetO*, *tetL*) of *Streptococcus agalactiae* isolated from milk of goats and sheep of livestock farms around Tehran

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ABSTRACT

Background and Aim: The condition of inflammation of the mammary tissue, often referred to as mastitis which can occur due to various factors, with *Streptococcus agalactiae* being one of the significant microbial agents responsible for its development. It often causes treatment costs and premature culling. The present study aimed to investigate antibiotic resistance genes for oxytetracycline in *Streptococcus agalactiae* strains isolated from the milk of goats and sheep in the Tehran region.

Materials and Methods: A total of 240 milk samples from goats and sheep suffering from mastitis were collected from industrial farms around Tehran and cultured on blood agar medium. The grown colonies underwent standard phenotypic and biochemical tests. Subsequently, the antibiotic sensitivity of the isolates was studied using the Kirby-Bauer disk diffusion method. To confirm the identification of bacteria from pure cultures confirmed by biochemical tests, PCR was employed for *Streptococcus agalactiae*. Finally, the resistance genes (tetO, tetM, tetL) were examined.

Results: The results indicated that out of the total 240 milk samples, 8 samples (6.7%) and 14 samples (11.7%) were infected with *Streptococcus agalactiae* in goats and sheep, respectively. The investigation of antibiotic resistance genes revealed that all positive samples from sheep's milk contained resistance genes to oxytetracycline. Among the 8 positive samples in goat's milk, only 4 samples were found to contain the *tetM* gene.

Conclusion: Considering the presence of a high number of antibiotic resistance genes, proper use of antibiotics and continuous and rapid screening of this microorganism should receive more attention to prevent the emergence and spread of antibiotic-resistant *Streptococcus agalactiae* strains

Keywords: *Streptococcus agalactiae*, mastitis, cow, tetracycline

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