

Summary of the MSc thesis No 7087., Faculty of Veterinary Medicine, Urmia University.

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**Title:** Genomic detection of *Streptococci* in cattle mastitis milk in Ilam province

### **Summary:**

Mastitis is one of the most common and important livestock diseases. Mastitis is an inflammatory disease of the mammary gland that is caused by many infectious agents. *Streptococci* are one of the most important microbial factors in causing mastitis. The present study was carried out to determine the prevalence and investigate oxytetracycline resistance genes in *Streptococci* isolated from the milk of bovine mastitis in cattle farms of Ilam province. In this study, For hundred milk samples were collected in different seasons (spring, summer, autumn and winter) from seemingly healthy cows in cattle farms in Ilam province under sterile conditions and transferred to the microbiology laboratory of Urmia University Medicine on ice. Then, milk samples were cultured on blood agar medium and bacteria were identified based on the type of hemolysis and catalase and oxidase tests. Then, in order to detect the antibiotic resistance to Oxytetracycline, they were cultured in Mueller-Hinton agar medium and checked for growth inhibition. Then, the boiling method was used to extract DNA from the samples. Then *16SrRNA* gene primers were used to confirm the final diagnosis of *Streptococcus*. The positive Streptococcal samples were checked for the presence of *tetO*, *tetL* and *tetM* antibiotic resistance genes using PCR method. The results showed that out of 400 samples of cow's milk, one sample (0.25%) was infected with *Streptococcus* by culture method and PCR technique. Also, based on antibiotic resistance genes, including *tetO* and *tetM* genes were positive. Finally, the results of determining the sequence and sequence based on the *16SrRNA* gene showed that there was a 95% similarity with the *streptococci* registered in the World Gene Bank. The accession number of the sequence registered in the World Gene Bank is (OP216536). The positive isolate identified with positive *tetM* and *tetO* genes, and sequencing was performed, was also registered in the World Gene Bank with accession numbers (OQ318182 and OQ318183), respectively. In order to minimize the risk of resistant bacteria, it is necessary to perform an antimicrobial susceptibility test before treatment and to evaluate the pattern of antibiotic resistance in each geographical region periodically. It's concluded that weather conditions have an effect on the type of mastitis-causing agent, and fortunately, a very low incidence of *Streptococcal* mastitis was observed in cows in Ilam region.

**Keyword:** Cow, Mastitis, Polymerase Chain Reaction, *Streptococcus*