

## Development of Loop Mediated Isothermal Amplification (Lamp) Assay for the Diagnosis of Ovine Theileriosis

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**Abstract :** Ovine Theileriosis is a world-wide concern, especially in tropical and subtropical areas, due to having tick abundance that has received less awareness in different developed and developing areas due to less worth of sheep, low to the middle level of infection in different small ruminants herd. Across Asia, the prevalence reports have been conducted to provide equivalent calculation of flock and animal level prevalence of Theileriosis in animals. It is a challenge for veterinarians to timely diagnosis & control of Theileriosis and farmers because of the nature of the organism and inadequacy of restricted plans to control. All most work is based upon the development of such a technique which should be farmer-friendly, less expensive, and easy to perform into the field. By the timely diagnosis of this disease will decrease the irrational use of the drugs, and other plan was to determine the prevalence of Theileriosis in District Jhang by using the conventional method, PCR and qPCR, and LAMP. We quantify the molecular epidemiology of *T. lestoquardi* in sheep from Jhang districts, Punjab, Pakistan. In this study, we concluded that the overall prevalence of Theileriosis was (32/350\*100= 9.1%) in sheep by using Giemsa staining technique, whereas (48/350\*100= 13%) is observed by using PCR technique (56/350\*100=16%) in qPCR and the LAMP technique have shown up to this much prevalence percentage (60/350\*100= 17.1%). The specificity and sensitivity also calculated in comparison with the PCR and LAMP technique. Means more positive results have been shown when the diagnosis has been done with the help of LAMP. And there is little bit of difference between the positive results of PCR and qPCR, and the least positive animals was by using Giemsa staining technique/conventional method. If we talk about the specificity and sensitivity of the LAMP as compared to PCR, The cross tabulation shows that the results of sensitivity of LAMP counted was 94.4%, and specificity of LAMP counted was 78%. Advances in scientific field must be upon reality based ideas which can lessen the gaps and hurdles in the way of scientific research; the lamp is one of such techniques which have done wonders in adding value and helping human at large. It is such a great biological diagnostic tools and has helped a lot in the proper diagnosis and treatment of certain diseases. Other methods for diagnosis, such as culture techniques and serological techniques, have exposed humans with great danger. However, with the help of molecular diagnostic technique like LAMP, exposure to such pathogens is being avoided in the current era. Most prompt and tentative diagnosis can be made using LAMP. Other techniques like PCR has many disadvantages when compared to LAMP as PCR is a relatively expensive, time consuming, and very complicated procedure while LAMP is relatively cheap, easy to perform, less time consuming, and more accurate. LAMP technique has removed hurdles in the way of scientific research and molecular diagnostics, making it approachable to poor and developing countries.

**Keywords :** distribution, thelaria, LAMP, primer sequences, PCR

**Conference Title :** ICVPMDM 2022 : International Conference on Veterinary Parasitology, Microbiology and Diagnostic Methods

**Conference Location :** Vancouver, Canada

**Conference Dates :** September 22-23, 2022