

## PREVALANCE AND MOLECULAR CHARACTERIZATION OF *GIARDIA DUODENALIS* IN LIVESTOCK IN VAN, TURKEY

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### ABSTRACT

*Giardia duodenalis* (*Giardia lamblia*, *Giardia intestinalis*), a flagellated parasite, is a gastrointestinal pathogen that affects public health worldwide. There are limited studies on the epidemiology and molecular characterization of *G. duodenalis* in farm animals in Turkey. Molecular characterization is required to determine the zoonotic potential of *Giardia* infection. In the present study, 71 calf 50 lamb, and 66 fecal stool samples were obtained from the animal rectum using a disposable latex glove and the samples were transferred to the laboratory. Then, the presence of cysts was examined with a microscope using of saturated zinc sulfate flotation method (ZnSO<sub>4</sub>; 33%). Afterwards, the samples were scanned with ELISA-based rapid diagnostic test kits for diagnosis. Then, DNA was extracted with QIAamp DNA Stool Mini Kit (Qiagen, Germany). Nested PCR was then conducted with the corresponding primers. DNA sequence analysis was conducted on beta-giardin gene region of each PCR positive samples. Then, sequence analyses were blasted and compared with the access numbers in the gene bank (M36728 for sub-genotype A1, AY072723 for sub-genotype A2, for AY072724 sub-genotype A3, AY072725 for sub-genotype A3, AY072725 for sub-genotype B1, AY072726 for sub-genotype B2, AY072727 for sub-genotype B3, AY072728 for sub-genotype B4). In the microscopic examination, *Giardia* cysts were identified in 41 calves, 41 lambs, and 23 goats. Positivity was determined with rapid test kits in 38 calves, 16 lambs, and 26 goats. In nested PCR results, specific bands (511 bp) were obtained in 46 calves, 21 lambs and 24 goats. Sequencing findings demonstrated Assemblage A and sub-genotype A3 presence in all animal samples. The importance of treatment and the need to take protective measures due to its zoonotic importance were emphasized.

**Keywords:** *Giardia duodenalis*, nested PCR, assemblage, farm animals.