

## Laboratory Diagnostic Testing of Peste des Petits Ruminants in Georgia

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**Abstract :** Every year the number of countries around the world face the risk of the spread of infectious diseases that bring significant ecological and social-economic damage. Hence, the importance of food product safety is emphasized that is the issue of interest for many countries. To solve them, it's necessary to conduct preventive measures against the diseases, have accurate diagnostic results, leadership, and management. The Peste des petits ruminants (PPR) disease is caused by a morbillivirus closely related to the rinderpest virus. PPR is a transboundary disease as it emerges and evolves, considered as one of the top most damaging animal diseases. The disease imposed a serious threat to sheep-breeding when the farms of sheep, goats are significantly growing within the country. In January 2016, PPR was detected in Georgia. Up to present the origin of the virus, the age relationship of affected ruminants and the distribution of PPRV in Georgia remains unclear. Due to the nature of PPR, and breeding practices in the country, reemerging of the disease in Georgia is highly likely. The purpose of the studies is to provide laboratories with efficient tools allowing the early detection of PPR emergence and re-emergences. This study is being accomplished under the Biological Threat Reduction Program project with the support of the Defense Threat Reduction Agency (DTRA). The purpose of the studies is to investigate the samples and identify areas at high risk of the disease. Georgia has a high density of small ruminant herds bred as free-ranging, close to international borders. Kakheti region, Eastern Georgia, will be considered as area of high priority for PPR surveillance. For this reason, in 2019, in Kakheti region investigated n=484 sheep and goat serum and blood samples from the same animals, utilized serology and molecular biology methods. All samples were negative by RT-PCR, and n=6 sheep samples were seropositive by ELISA-Ab. Future efforts will be concentrated in areas where the risk of PPR might be high such as international bordering regions of Georgia. For diagnostics, it is important to integrate the PPRV knowledge with epidemiological data. Based on these diagnostics, the relevant agencies will be able to control the disease surveillance.

**Keywords :** animal disease, especially dangerous pathogen, laboratory diagnostics, virus

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