Toxoplasma gondii in Slaughtered Sheep in High- and Low-Humidity Regions in the South of Iran: Molecular Prevalence and Genotype Identification

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Toxoplasma gondii is one of the most common meat-born zoonoses that infect all warm-blooded animals and humans. Sheep (Ovis aries) is one of the main reservoirs of T. gondii worldwide, and the infections induce various sequels, such as abortion and stillbirth. The present study aimed to identify the effects of humidity on the prevalence of T. gondii in sheep in high- and low-humidity regions. Heart samples from 200 slaughtered sheep (140 samples from a high-humidity region and 60 samples from a low-humidity region) were collected from Hormozgan Province (south of Iran). The samples were tested by nested PCR targeting the RE gene. Genotyping was performed by the PCR-RFLP method using the SAG3 and GRA6 genes. Some isolates were sequenced and recorded in the GenBank. T. gondii DNA was detected in 10.71 percent of the samples from the highly humid region, whereas no positive samples were detected in the low-humidity region. Genotyping revealed that all isolates belonged to the T. gondii type III genotype. Our study indicated that humidity is an important factor for the prevalence of T. gondii in sheep. Additionally, our study also showed the dominance of type III strain of T. gondii in sheep in the south of Iran.

Keywords: Toxoplasma gondii, Genotype Identification, Slaughtered Sheep