Identification of sarcocystis species among slaughtered sheep using PCR-RFLP analysis in Ardabil, Iran

Abstract

Background: Sarcocystis is an intracellular protozoan parasite in the phylum Apicomplexa. Various species of this parasite infect mammals, reptiles and birds. In the present work it was detected that there are sarcocystis species among slaughtered sheep in Ardabil.

Methods: Oesophagus,diaphragm and heart muscles of 120 sheep were collected from Ardabil slaughterhous as a sample(60 macroscopic and 60 microscopic sarcocystis).Microscopic cysts was determined using direct tissue impression smears and sediment smears of digested samples by pepsin and staining them by Giemsa stain for observing bradyzoite of sarcocystis.DNA was extracted using the genomic DNA extraction Kit and PCR-RFLP was utilized for all the samples.

Result: As a result of this study, microscopic cysts were observed in 41.6% of impression smears and 100% of tissue digestions. Utilizing PCR-RFLP method, the researchers found that there are Sarcocystis gigantea in 100% of the macroscopic cysts, Sarcocystis tenella in 95% and Sarcocystis arieticanis in 5% of the microscopic cysts.

Conclusion: This research concludes that PCR-RFLP method and using specific primers, TaqI, AvaI, EcoRI enzymes are easy and rapid methods for isolating Sarcocystis species belonged to macroscopic and microscopic cysts.

keywords: Sarcocystis, PCR-RFLP, Sheep, Iran