

## ***Toxoplasma gondii* infection in slaughtered ewes in Khorramabad, western Iran: A preliminary molecular study**

Olfaty-Harsini, S., Shokrani, H.\* , Nayebzadeh, H.

*Department of Pathobiology, Faculty of Veterinary Medicine, Lorestan University, Khorramabad, Iran*

### **Key words:**

frequency, PCR, protozoa, sheep, *Toxoplasma gondii*

### **Correspondence**

Shokrani, H.

Department of Pathobiology,  
Faculty of Veterinary Medicine,  
Lorestan University, Khorram-  
abad, Iran

Tel: +98(66) 33120109

Fax: +98(66) 33120109

Email: hamidreza\_shokrani@  
yahoo.com

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### **Abstract:**

**BACKGROUND:** The parasitic protozoa *Toxoplasma gondii* is widely prevalent in humans and warm-blooded animals. Humans are usually infected with *T. gondii* by ingesting oocysts shed by cats or by ingesting viable tissue cysts present in raw or undercooked meat. **OBJECTIVES:** This preliminary study was conducted to assess the frequency of *Toxoplasma gondii* infection in tissue samples of ewes slaughtered in Khorramabad, in the west of Iran. **METHODS:** We examined the brain tissue, diaphragm, tongue and masseter muscles of 30 ewes. A nested-PCR which targets the 25-50 copies of B1 sequence has been used for tissue samples. **RESULTS:** The parasite was identified in 21 brain samples (70%) and 8 muscle samples (26.6%). Twenty-three sheep (76.6%) were infected with *T. gondii*. **CONCLUSIONS:** *T. gondii* might be considered as one of the major causes of ovine abortion in this region. According to the result, edible parts of sheep may play a greater role as a source of infection for individuals living in this area.

### **Introduction**

*Toxoplasma gondii* is a cosmopolitan zoonotic parasite, which is widely prevalent in humans and other warm-blooded animals. This parasite is an important cause of abortion in sheep and is a significant cause of economic loss to sheep industry. Furthermore, *T. gondii* infection is listed as the third-biggest cause of life threatening food-borne diseases (Kravetz and Federman, 2005). Up to one-third of the human world population is chronically infected with this obligate intracellular protozoan parasite (Tenter et al., 2000). The life cycle of *T. gondii* is facultatively heteroxenous and divides into an asexual cycle with little host specificity and a sexual cycle resulting

in the production of oocysts by cats (Tenter et al., 2000). Humans are usually infected with the parasite as a result of consuming raw or undercooked meat containing viable tissue cysts (Dubey, 2009).

Sheep meat is an important source of food for humans living in developing countries such as Iran. Numerous studies on prevalence of *T. gondii* in sheep have been carried out in different countries. Most of these studies have revealed a wide variation in the prevalence rates ranging between 3% and 95.7% within and across different countries (Dubey, 2009). In general, the variation in the prevalence rates among different regions is related to several factors such as the presence of oocysts (density of stray cats or wild felines), climatic condi-