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Molecular detection of *Toxoplasma gondii* in the slaughter sheep and goats from North India

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Highlights

- This is the first North Indian study molecularly confirming *T. gondii* in 1.69% (95% CI 0.58–4.86%) and 1.35% (95% CI 0.46–3.88%) of the slaughter sheep and goat, respectively.
- The current level of infection in slaughter sheep and goat indicates that *T. gondii* is a low food safety risk for public health in North India.
- Further studies are required to characterize clonal lineages of *T. gondii* circulating in sheep and goat populations in North India.

Abstract

Toxoplasma gondii is an obligate intracellular parasite that infects almost all the warm blooded animals, including human beings. The disease usually remains asymptomatic but is a serious concern for pregnant women, developing foetus and immuno-compromised individuals. We collected 400 cardiac/skeletal muscle tissue samples from slaughter sheep (177) and goat (223) intended for human consumption from Punjab, Uttar Pradesh and Chandigarh states/union territory in North India. The samples were pepsin-HCl digested and DNA was extracted from all the digested samples. Nested-PCR was carried out to amplify 580bp and 531bp bands with external and internal sets of primers specific for B1 gene of *T. gondii*. Molecularly, six (1.5%) isolates of *T. gondii* were detected. In PCR, *T. gondii* DNA were detected from 1.69% and 1.34% of the sheep and goat samples, respectively. Three PCR amplified products were sequenced in both the directions and readable sequences were obtained. Due to a low level of polymorphism in the targeted B1 gene, the clonal lineages of

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