

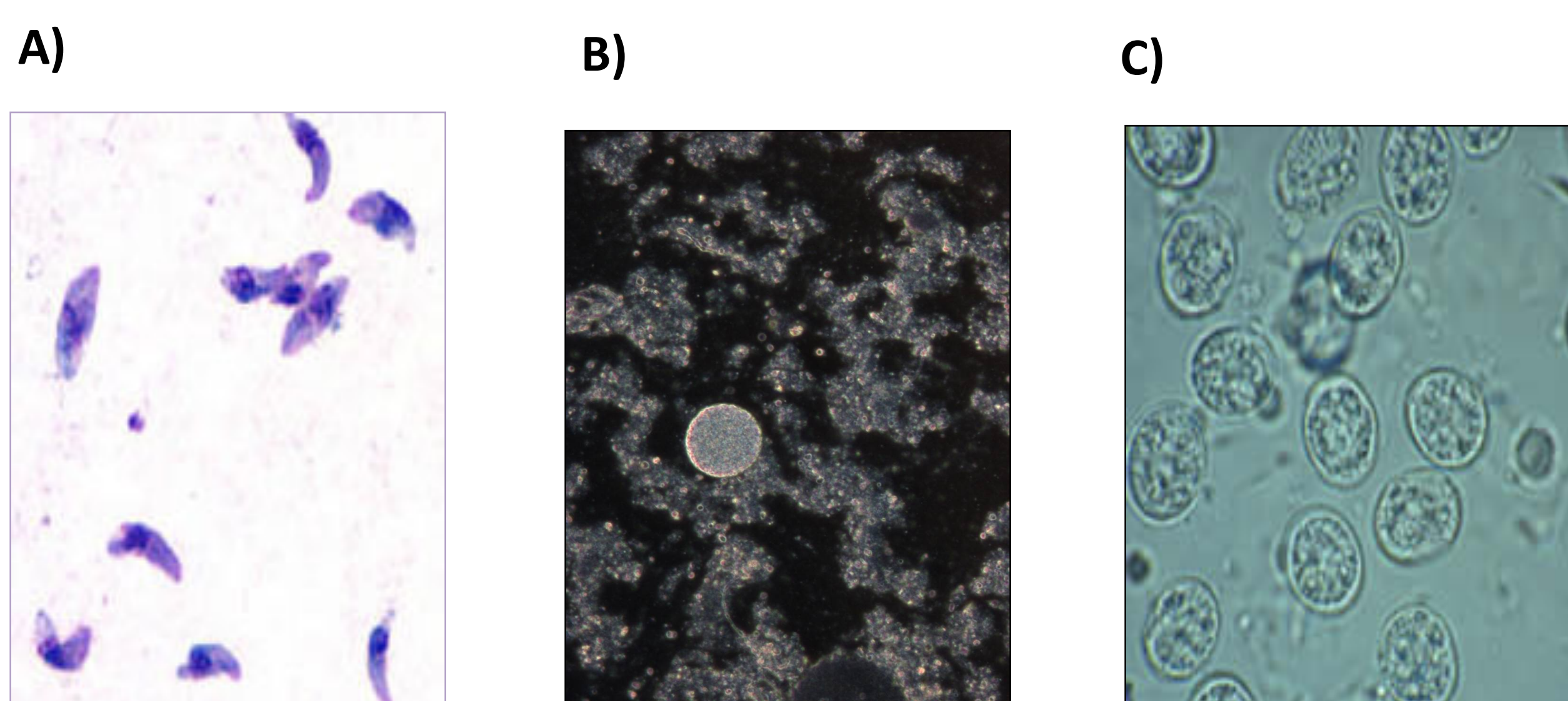
Toxoplasmosis on pig farms

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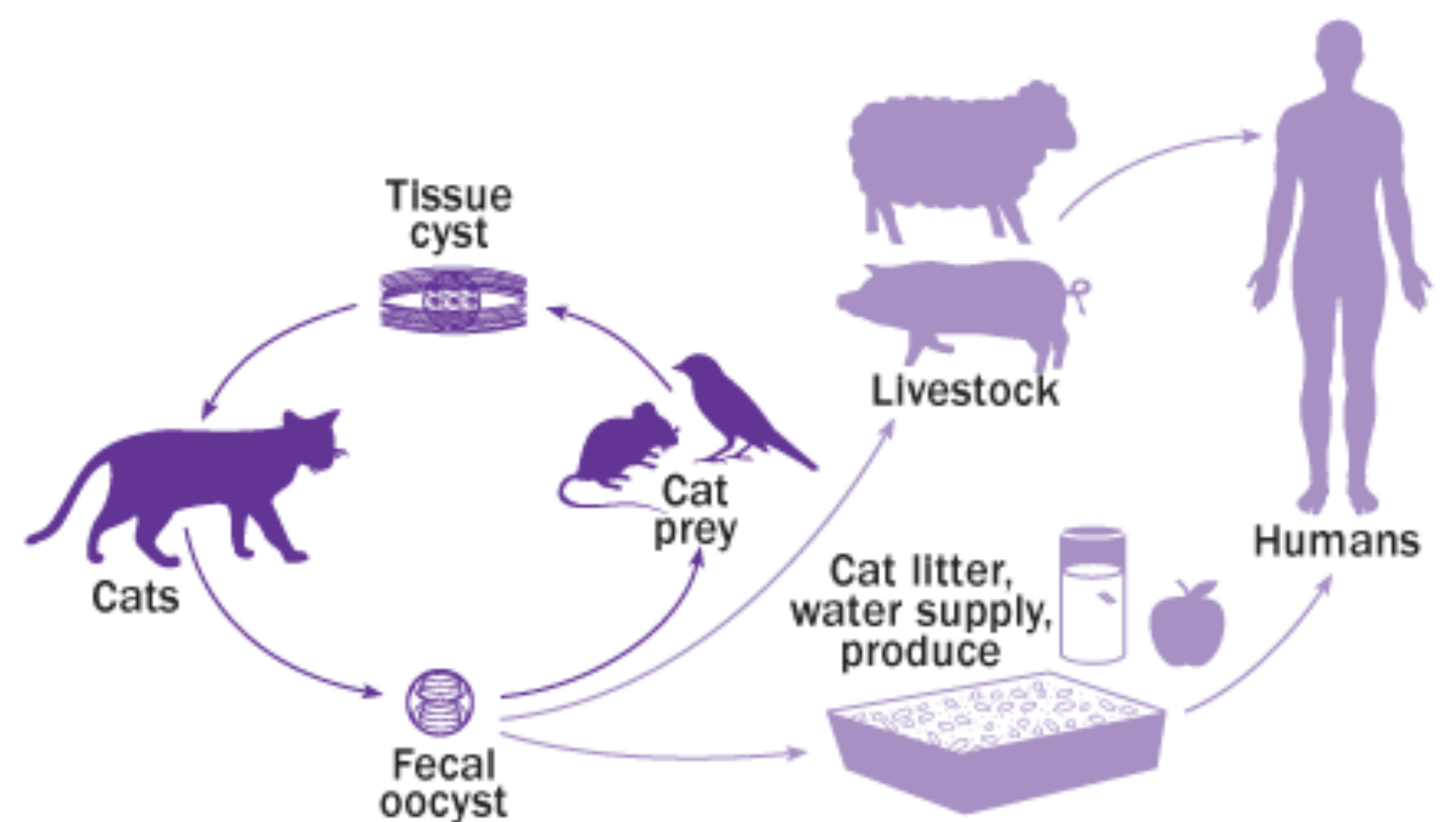
BACKGROUND

Toxoplasmosis is a parasitic infection caused by the intracellular protozoa *Toxoplasma gondii*. The parasite has a complex lifecycle and affects a definitive host (members of the order *Felidae*) as well as various intermediate hosts, among which domestic and wild warm-blooded mammals. During the distinct developmental phases, the parasite manifests itself as a tachyzoite (A), a bradyzoite (B) and a sporozoite (C), respectively.



A tachyzoite is a rapidly multiplying form of *T. gondii*, present during the acute infection. It invades all types of cells by active penetration, and transforms intracellularly into a bradyzoite, which can be found encysted in the host, most frequently in neural and muscular tissues and less predominantly in visceral organs. The bradyzoites represent the slow replicating form of the parasite, and, since they form tissue cysts, they can persist for the lifetime of the host. The third form of the parasite, the sporozoite, is present in the sporulated oocysts, which are shed by the final host.

Several infection routes of *T. gondii* are distinguished between the final and intermediate hosts. The herbivore mammals spread the disease by ingestion of oocysts from the environment, while carnivores use predation of infected small animals for this purpose. Consequently, infection in humans can be induced by the consumption of raw or undercooked meat of infected domestic or wild animals. Additionally, contaminated water or vegetables can lead to accidental ingestion of oocysts.



The infection with this pathogen causes severe diseases in humans and has an important economic impact in domestic animals. One of the main sources of infection in humans is the consumption of raw or undercooked meat from domestic animals.

OBJECTIVES

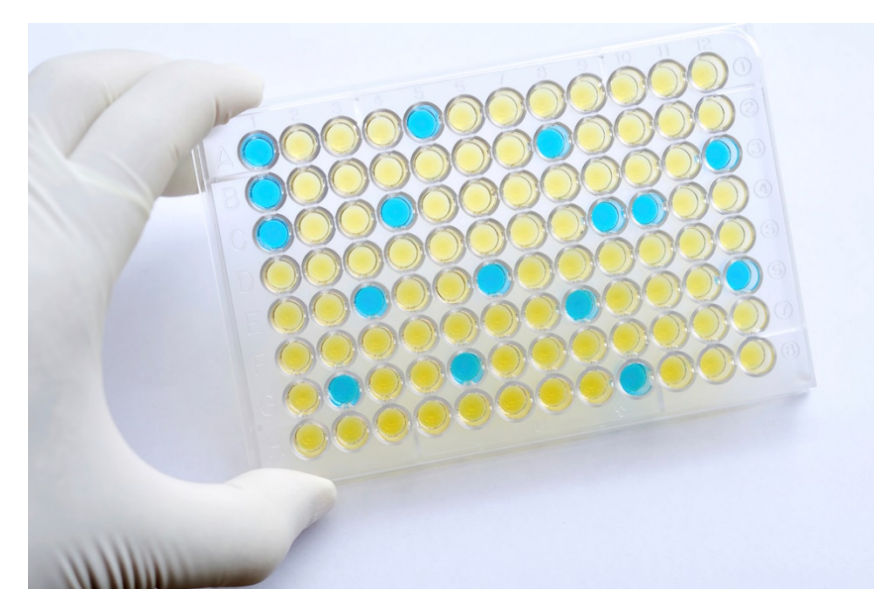
The objective of this study is to determine the presence of *T. gondii* on farm level and to perform a follow-up study of naturally infected piglets by serological techniques. After detection of the spontaneous seroconversion, the accompanying immune response will be investigated by *in vitro* assays, followed by the parasite isolation and genetic identification of *T. gondii* strain(s).

sampling

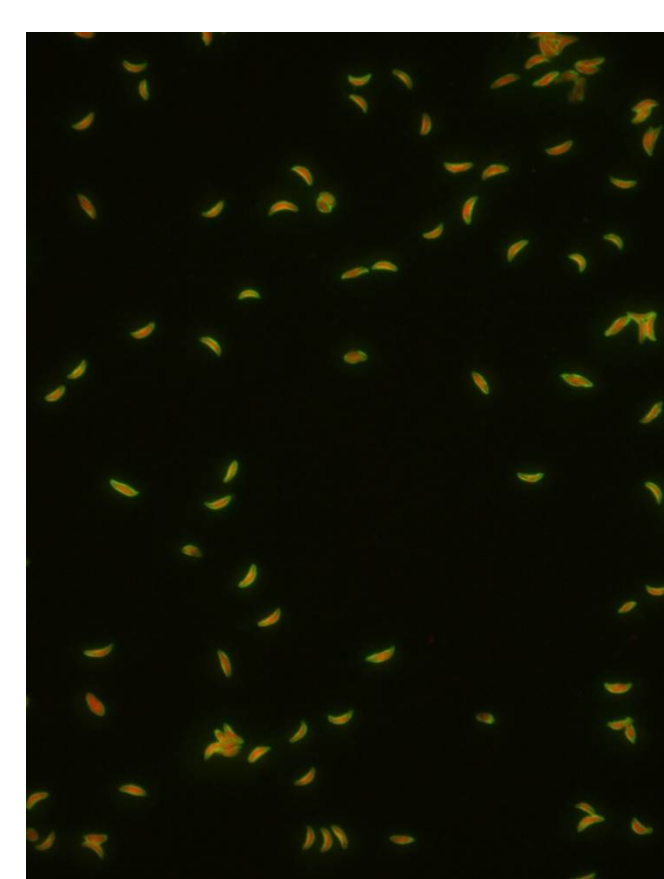
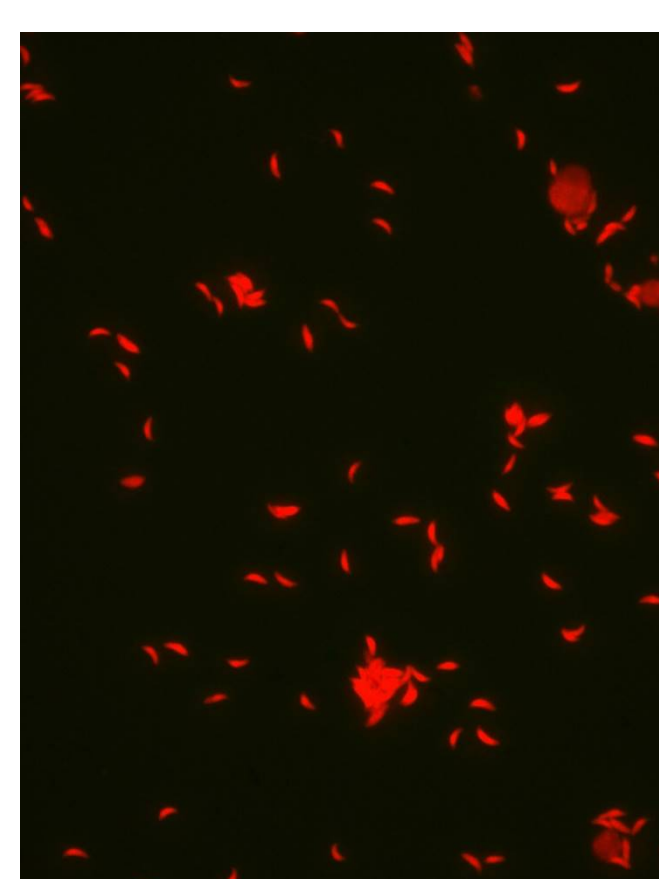


serological and *in vitro* assays

antigen and cytokine ELISA

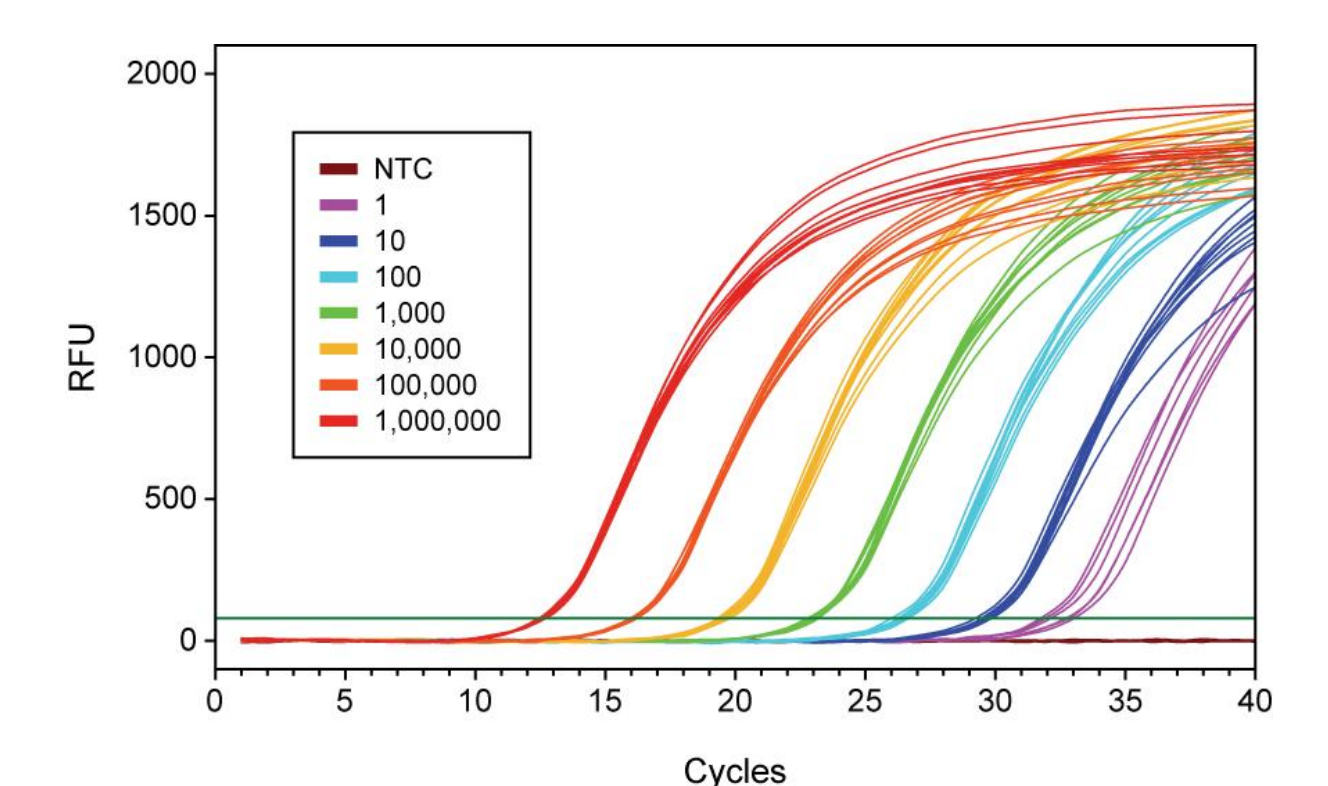


immunofluorescence assay



parasite isolation and strain identification

PCR



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