

Domestic Dog as a Potential Spreader of *Sarcocystis* Parasites in Vilnius City

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INTRODUCTION & AIM

Sarcocystosis is caused by protozoan parasites of the genus *Sarcocystis*, which have a two-host life cycle involving intermediate and definitive hosts. These parasites are globally distributed and can infect humans, domestic animals, and wildlife. Canids, including domestic dogs, play a key role in the transmission of *Sarcocystis*. [1,2] Despite their close interaction with humans, little is known about the role of dogs in spreading *Sarcocystis* in Europe.

This study aimed to investigate the prevalence and diversity of *Sarcocystis* species in dog feces in Vilnius, Lithuania, using molecular methods.

METHOD

A total of 25 environmental fecal samples from domestic dogs were obtained in Vilnius, Lithuania, during June 2023.

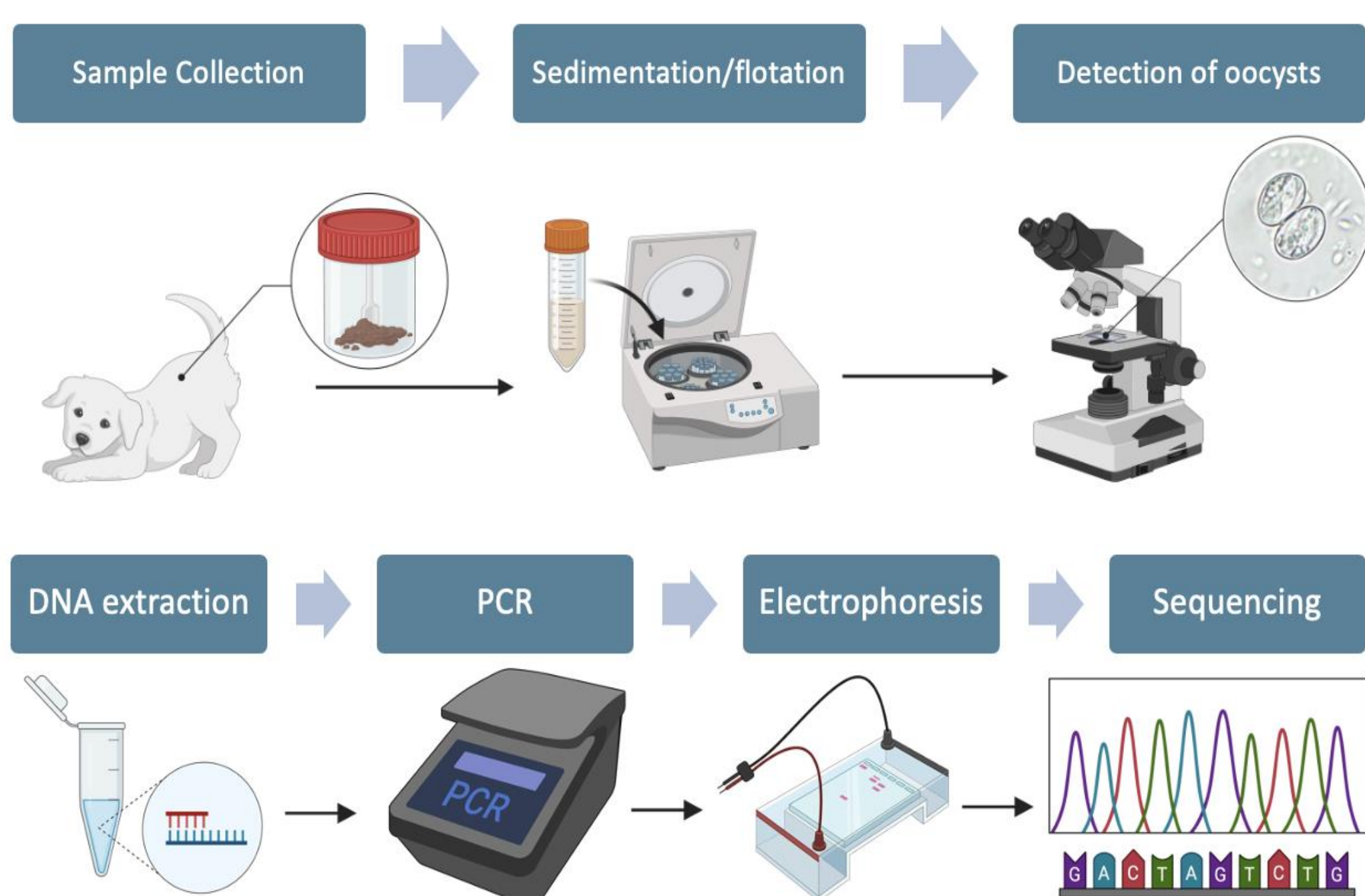


Fig 1. Scheme of the methodology used in this investigation

RESULTS & DISCUSSION

The molecular identification of *Sarcocystis* species in dog feces from Vilnius represents the first such findings in Lithuania. Infective forms of *Sarcocystis* parasites were not observed under the light microscope. However, using nested PCR targeting the *cox1* gene, four *Sarcocystis* species were identified: *S. tenella*, *S. arieticanis*, *S. miescheriana*, and *S. hjorti*.

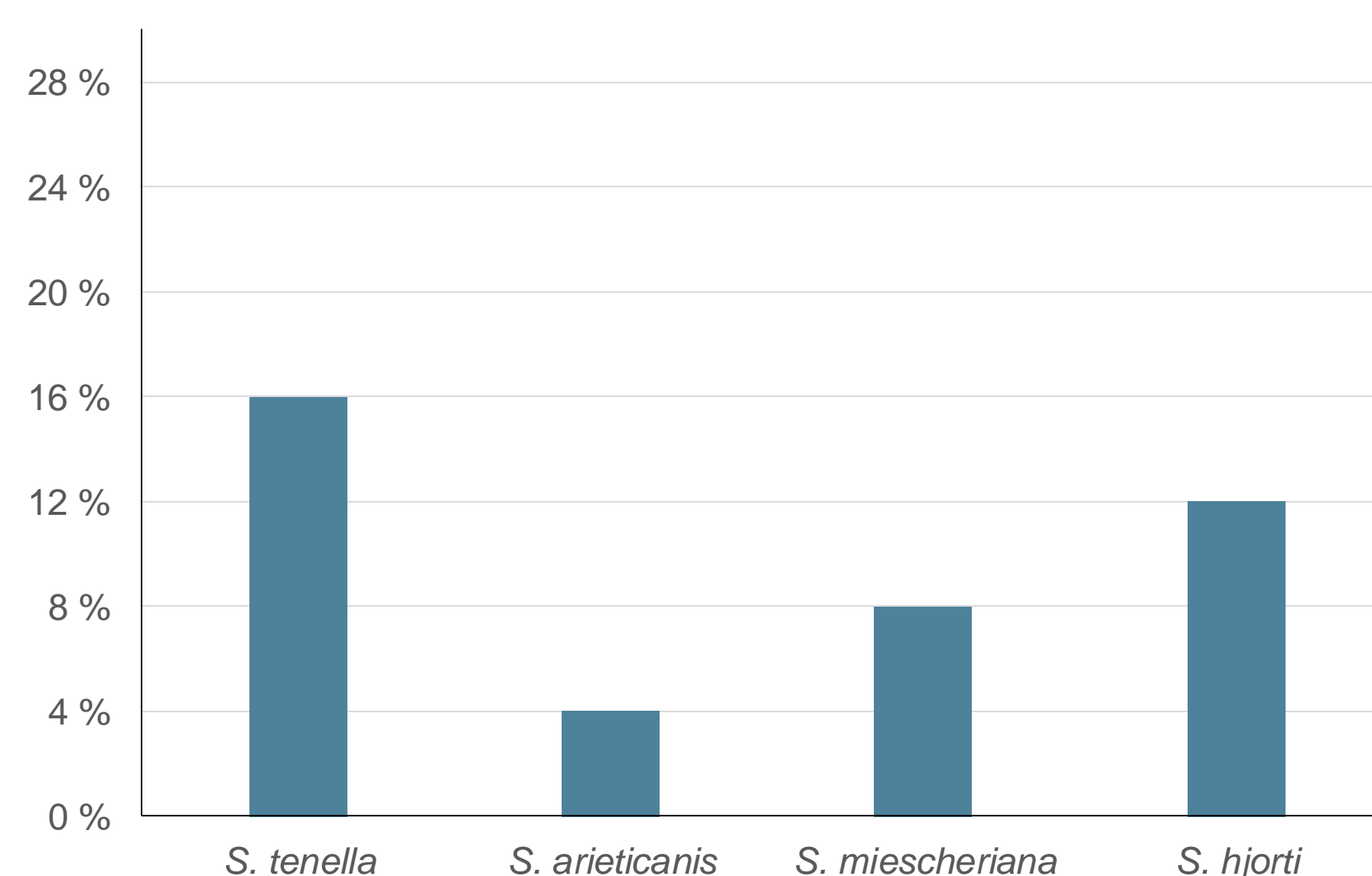


Fig 2. Prevalence of *Sarcocystis* species in the feces of domestic dog

The identified species, which typically parasitize pigs, sheep, and deer, suggest that domestic dogs may act as definitive hosts due to their consumption of raw or improperly processed meat from these animals. The findings underscore the role of dogs in the local transmission of *Sarcocystis* parasites, potentially due to their interaction with wildlife and farm animals.

CONCLUSION

This study offers the first molecular evidence of *Sarcocystis* species in domestic dogs in Vilnius, indicating exposure to diverse food sources that may facilitate parasite transmission. These findings highlight the need for further research on the public health implications of *Sarcocystis* infections in urban settings.

FUTURE WORK / REFERENCES

- [1] Dubey, J.P., Calero-Bernal, R., Rosenthal, B.M., Speer, C.A., Fayer, R., 2015. Sarcocystosis of animals and humans, 2nd ed. CRC Press.
[2] Fayer, R., 2004. *Sarcocystis* spp. in human infections. *Clin. Microbiol. Rev.* 17, 894-902.