Detection of Toxoplasma gondii in sylvatic rodents in Poland using molecular and serological methods

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Rodents are known to be reservoirs of *Toxoplasma gondii* and keep the parasite circulation in the environment.

We conducted biomonitoring to assess the role of sylvatic rodents in maintaining *T. gondii* and to analyse the prevalence and seroprevalence of the parasite in seven wild rodent species.

Rodents were collected in our open grassland study site located in northeastern Poland and dissected. We collected brain, spleen, blood and serum samples. We applied both molecular (PCR assay, nested-PCR assay) and serological (ELISA and agglutination tests) methods to indicate the best approach for application in the biomonitoring of *T. gondii* in small mammals.

We screened samples from 68 individuals using PCR assays and found no *T. gondii* DNA. The agglutination test showed no signal. We found antibodies against *T. gondii* in 5 sera samples out of 56 analysed (seroprevalence = 8.9% [4.4-16.8]).

Our results confirm that rodents participate in the life cycle of *T. gondii* as reservoirs of this parasite in the sylvatic environment. However, biomonitoring should be performed with the ELISA tests to search for *T. gondii* antigens, rather than a molecular approach only.