

Anti-*Trichinella* antibodies in the meat juice of different species of carnivores

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Nematodes from the genus *Trichinella* occur approximately in 150 species of carnivores and omnivores. These parasites are found in the domestic cycle in pigs, horses and humans, and in the sylvatic cycle in many animals including wild boars, red foxes, raccoon dogs, martens, wolves and rodents. In Poland, the presence of four *Trichinella* species: *T. spiralis, T. britovi, T. nativa* and *T. pseudospiralis* has been described. Infection occurs after eating meat containing *Trichinella* larvae. Infection with nematodes of the genus *Trichinella* causes non-specific and specific immune responses, which can be varied depending on the infection dose, species of *Trichinella* and host species. The presence of anti-*Trichinella* antibodies may be observed in both serum and meat juice. However, no studies have addressed the presence of specific antibodies against *Trichinella* spp. in the meat juice of wild animals. Therefore, the aim of the study is to determine the prevalence of antibodies against *Trichinella* spp. in meat juice in free-living carnivores. Meat juice from muscle samples was taken from foxes, badgers, raccoon dogs and martens from the Głęboki Bród Forest District (agreement NEU-0744/LIFE-1/13/1 dated 02.18.2013, Project LIFE+). Antibodies against *Trichinella* spp. were detected by indirect ELISA by ID Screen® *Trichinella* Indirect Multi-species (IDVet, France) in the meat juice from 20 foxes, 26 raccoon dogs, 24 badgers and 18 martens. Antibodies against *Trichinella* spp. were detected in three meat juice samples from foxes (15%) and 12 samples from raccoon dogs (46%). ELISA returned a doubtful result for one case of meat juice from foxes. Positive ELISA results corresponded with the presence of *T. britovi* larvae in the muscle samples of examined animals. The positive and doubtful results from ELISA were confirmed by immunoblot, which revealed a different protein pattern in meat juice from red foxes, raccoon dogs and badger. Additionally, immunoblot confirmed the presence of anti-*Trichinella* antibodies in one of three infected badgers; however, none of them were positive in ELISA. The most frequently observed bands have been classified for further analysis with regard to the detection of specific proteins.

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