

Molecular detection of *Bartonella* sp. in carnivores in Poland

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Bacteria of the genus *Bartonella* are gram-negative bacilli belonging to the family Bartonellaceae. This species occurs within erythrocytes and periodically located in the endothelium of blood vessels. *Bartonella* occur in many species of mammals and have been found in humans. Some species can cause symptoms of diseases like cat scratch disease or bartonellosis. More than 30 species have been described, of which more than half is pathogenic to humans. *Bartonella* sp. have a wide range of vectors throughout its environment, such as fleas, lice, ticks and other arthropods like *Lipoptena cervi*. The bacteria are common in carnivorous mammals worldwide.

The aim of the study was to assess the extent of infection predatory animals by bacteria of the genus *Bartonella* in north-eastern Poland. Fragments of spleens were collected from five species of predatory animals: foxes (*Vulpes vulpes*), badgers (*Meles meles*) and raccoon dogs (*Nyctereutes procyonoides*), martens (*Martes* sp.) and polecats (*Mustela putorius*) culled in forest district Głęboki Bród in Augustów Forest. A total of 162 samples were collected from the spleens of test subjects. The largest group were extensively studied raccoon dogs (63), foxes (31), badgers (39), martens (25) and polecats (4). DNA was isolated by Genomic AX Tissue Mini kit (A & A Biotechnology, Gdynia). In order to detect the bacteria of the genus *Bartonella*, primers were used to detect 350 bp fragment of the rpoB gene. Two attempts have been sequenced, to be certain of obtaining a positive result for *Bartonella*.

In the studied group, the proportion of animals infected with *Bartonella* sp. amounted to 11.11% (18/162). The results of the sequencing confirmed the presence of *Bartonella* sp. Among the sampled species, the greatest extent of infection was in foxes (12.9%), with raccoon dogs at 12.7% and martens at 12%. In the case of badgers the extent of infection was 7.69%. No infection was found in polecats, however, only 4 individuals were investigated. Females were more frequently infected than males (respectively 16.42% and 9.64%). This is the first report of the detection of bacteria of the genus *Bartonella* in predatory animals on Polish territory.