

A molecular survey of hemotropic *Mycoplasma* species in domestic and wild living animals in Slovakia

Martina Komjáti-Nagyová, Bronislava Víchová

Department of Vector-Borne Diseases, Institute of Parasitology, Slovak Academy of Sciences, Hlinkova 3, 040 01 Slovak Republic

Corresponding Author: Martina Komjáti-Nagyová; e-mail: komjati-nagyova@saske.sk

Hemotropic mycoplasmas, so-called hemoplasmas, are epierythrocytic microbes lacking cell walls which attach to erythrocytes or appear free in the plasma of a variety of animal species. Several *Mycoplasma* species have zoonotic potential and can be transmitted by hematophagous arthropods or directly through infected blood (Santos et al., 2008).

During the spring months of 2016, altogether 73 EDTA treated blood samples of cattle, 157 blood samples of goats and more than 250 blood samples from wild carnivores were obtained and screened by polymerase chain reaction (PCR) for the presence of hemoplasmas. In cattle, the prevalence of *Mycoplasma* infection was relatively high (61.6%). Two distinct species have been identified, namely *Mycoplasma wenyonii* (formerly *Eperythrozoon wenyonii*) and „*Candidatus* Mycoplasma haemobos".

In total, six out of 157 blood samples of goats tested positive, with *Mycoplasma ovis* (formerly *Eperythrozoon ovis*) being the most common species. Several animals suffered from severe hemolytic anemia. Subsequently, some young and some older individuals died, which could be attributed to the presence of acute mycoplasmal infections and co-infections with other serious pathogens. In wild canine carnivores, the spectrum of *Mycoplasma* species was wider. Identified hemoplasmas differ in their pathogenic potential. Sequencing confirmed the presence of *M. haemocanis* (formerly *Haemobartonella canis*), *M. haemofelis* (formerly *Haemobartonella felis*), „*Candidatus* Mycoplasma turicensis" and *M. haemobos* in red foxes (*Vulpes vulpes*). The treatment of infected animals is sometimes complicated. Hemoplasma-infected animals frequently become chronic carriers, even after antibiotic treatment. Chronically infected animals may experience reactivated infection under appropriate conditions such as immunosuppression, stress, gravidity or lactation. Chronic carriers could subsequently represent a source of infection for other animals. Up to now, no studies have examined hemoplasma infections in wild and domestic animals living in Slovakia.

The study was realized within the frame of the project „Centre of Excellence for Parasitology" No. 26220120022 supported by the operating program „Research and Development" funded by the European Fund for Regional Development (0.4), a project of the Scientific Grant Agency of the Ministry of Education of the Slovak Republic and Slovak Academy of Sciences: VEGA 2/0126/16 and VEGA 2/0018/16.