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MOLECULAR DETECTION OF *COMAMONAS* SP. SYMBIONTS FOR DIAGNOSIS OF *SPIROCERCA LUPI* IN DOGS

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The interaction between nematodes and their bacterial symbionts has recently become a focus of novel treatment regimens for many diseases caused by helminths. Interactions between nematodes and bacteria can be mutualistic, or pathogenic/ parasitic and may be transient or symbiotic. The presence of a novel bacterial symbiont in *Spirocerca lupi*, that is closely related to *Comamonas* spp. (Order Burkholderiales, Family Comamonadaceae) of the Class Betaproteobacteria, has been shown by the amplification of the 16S rDNA gene by PCR. Spirocercosis is a vector-borne nematode infection transmitted by coprophagic beetles and the adult worms form nodules in the thoracic part of the oesophagus. Most clinical cases are fatal and diagnosed only in the later stages based on the presence of *Spirocerca* eggs in the faeces or the detection of *Spirocerca* nodules in the oesophagus, mainly at necropsy. At present, the diagnosis of *Spirocerca* infection at the early stages is difficult and almost impossible. Thus, the objectives of this study were to determine the host specificity of the symbiont *Comamonas* for *S. lupi* and the possibility of detecting *Comamonas* to diagnose spirocercosis using PCR. Twenty blood samples from dogs suspected with spirocercosis that were presented to Veterinary Teaching Hospital were used in this study. DNA was extracted from serum samples using a commercial kit. All the serum samples were subjected to western blotting against the excretory secretory antigen of *S. lupi*. Thereafter, PCR was performed using *Comamonas* sp. specific primer sets targeting part of the 16S rDNA gene. PCR was also performed on DNA extracts of *Ancylostoma caninum, Toxocara canis, Dirofilaria repens* and *Dipylidium caninum* simultaneously in order to determine whether *Comamonas* sp. is present in other common helminths of dogs in Sri Lanka. Only four samples were positive for the excretory secretory antigen as determined by western blotting, and these samples were also positive for the presence of *Comamonas* sp. using PCR. *Comamonas* sp. was not found in the other helminths. Therefore, this study suggests that the presence of *Comamonas* sp. could be used as a diagnostic tool for spirocercosis in dogs.

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