

## **Molecular characterization of a *Toxocara* variant from cats in Kuala Lumpur, Malaysia**

### **ABSTRACT**

The ascaridoid nematode of cats from Kuala Lumpur, Malaysia, previously identified morphologically as *Toxocara canis*, was characterized using a molecular approach. The nuclear ribosomal DNA (rDNA) region spanning the first internal transcribed spacer (ITS-1), the 5.8S gene and the second internal transcribed spacer (ITS-2) was amplified and sequenced. The sequences for the parasite from Malaysian cats were compared with those for *T. canis* and *T. cati*. The sequence data showed that this taxon was genetically more similar to *T. cati* than to *T. canis* in the ITS-1, 5.8S and ITS-2. Differences in the ITS-1 and ITS-2 sequences between the taxa (9.4-26.1%) were markedly higher than variation between samples within *T. canis* and *T. cati* (0-2.9%). The sequence data demonstrate that the parasite from Malaysian cats is neither *T. canis* nor *T. cati* and indicate that it is a distinct species. Based on these data, PCR-linked restriction fragment length polymorphism (RFLP) and single-strand conformation polymorphism (SSCP) methods were employed for the unequivocal differentiation of the *Toxocara* variant from *T. canis* and *T. cati*. These methods should provide valuable tools for studying the life-cycle, transmission pattern(s) and zoonotic potential of this parasite.

**Keyword:** Ascaridoid nematodes; Cats; Malaysia; *Toxocara* variant