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Report on the phylogenetic studies of diplostomatid parasites

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Introduction: Diplostomid metacercariae inhabit freshwater fish species as the second intermediate hosts. These parasites have been found in the eye lens, the retina, vitreous humor and the nervous system of freshwater fish. The classification of these parasitic stages to the species level using only morphology is often difficult and ambiguous. The use of molecular techniques has allowed links to be elucidated using various developmental stages of these parasites. The aim of this study was to provide a summative report on the phylogenetic tree by applying molecular biology techniques to the investigation of larval diplostomid parasites.

Materials & Methods: Diplostomid metacercariae were preserved in 70% ethanol prior to DNA extractions using Qiagen kit. Standard techniques for amplification of rRNA region were followed. The DNA amplicons were sent to Inqaba Biotech laboratory for sequencing and phylogenetic trees generated using software programs.

Results: The amplicons of these diplostomids had band sizes of 500 base pairs. The amplicons contained only partial regions (ITS-2). The parasitic species 28S rDNA genomic region was successfully amplified.

Conclusion: The application of molecular techniques on digenetic trematodes seems very promising and may yield great potential in future descriptions of morphologically similar parasitic species.

Biography

Mitonga M M A received his Bachelor of Science degree from the University of Limpopo, Medunsa Campus, Pretoria, in South Africa. In 2013, he joined the Department of Biology, Sefako Makgatho Health Sciences University as a Senior Technical Officer. Currently, his project focuses on the morphology and molecular characterization of metacercariae from freshwater fish of South Africa.

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