A REVIEW OF PARTIAL GENOMIC REGIONS: ITS-2 AND 28S rDNA OF DIPLOSTOMID METACERCARIAE COLLECTED FROM FRESHWATER FISH

Mitonga M.M.A, Moema E.B.E., King P.H. & Rakgole J.N.

Department of Biology, PO Box 139, Sefako Makgatho Health Sciences University: Medunsa Campus, 0204

Department of Virology, PO Box 139, Sefako Makgatho Health Sciences University: Medunsa Campus, 0204

E-mail: amifmi1@gmail.com; Ami.Mitonga@smu.ac.za

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 review on phylogenetic studies of diplostomid metacercariae collected from freshwater fish.

Collected diplostomid metacercariae were preserved in 70% ethanol prior to DNA extractions using Qiagen kit. Standard techniques for amplification of rDNA region were followed using primer pairs: Dig 125/1500R and ITS-2 primers. The DNA amplicons were sent to inqaba Biotech laboratory for sequencing and phylogenetic trees generated using BioEdit and MEGA v5.22 software programs.

The assays yielded 500 bp for ITS-2 and 1300 bp for Dig 125/1500R, respectively as seen on the gel images. Nucleotide positions were only based on the analyzed regions and a phylogenetic tree was constructed using sequences of the two parasites.

A full length genome analysis of these two organisms should be done in order to establish more definitive evidence of whether they belong to the same species.