



PP 24

Cloning and Characterisation of Alkali Myosin Light Chain Gene of Cattle Filarial Parasite, *Setaria digitata*

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In view of the paucity of parasite material, very little is known about the molecular biology of *Wuchereria bancrofti*, the causative organism of lymphatic filariasis in Sri Lanka. *Setaria digitata*, a cattle filarial parasite closely resembles *W. bancrofti* in many aspects and can be used as a model organism to study *W. bancrofti*. Alkali myosin light chain gene of *S. digitata* was characterised by sequencing a genomic clone isolated from the genomic library of this parasite. Though the 5'-flanking region did not reveal any consensus TATA box sequence, a potential CAAT box like sequence, CCAAT, and the putative transcription initiation site reported in other muscle related genes with a consensus sequence TCA(C/G)T were identified. The entire gene had four exons encoding 149 amino acids. Sequences around the splice junctions were fairly conserved and agreed with the general GT-AC splicing rule. The 3'-flanking region consisted of three putative polyadenylation signals with the sequence AATAAA. The gene was AT rich with a GC content of 35%. Southern hybridization studies indicated this gene to be a single-copy gene. Amino acid sequence showed more than 80% similarity with *C. elegans* and 40-50% similarity with other vertebrate and invertebrate myosin light chains. Analysis of amino acid sequence with the NCBI conserved domain database for interactive domain family identified the protein as a member of the calcium binding protein family, as it is comprised of two highly conserved EF hand motifs.

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