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A sensitive polymerase chain reaction based assay for the detection of *Setaria digitata*: The causative organism of cerebrospinal nematodiasis in goats, sheep and horses

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Abstract

A sensitive PCR assay for the detection of *Setaria digitata* has been developed. Two oligonucleotide primers (17 nt) were designed from a previously cloned and characterized tandemly arranged repetitive sequence of *Setaria digitata*. Using these primers, it was possible to amplify small quantities (100 fg) of *S. digitata* genomic DNA. A simple procedure, using proteinase K and non-ionic detergent NP 40, was followed to process the host blood samples and mosquitoes harbouring L_3 larvae. The sensitivity of the polymerase chain reaction based assay surpasses the microscopic detection and the previously reported oligonucleotide based chemiluminescent detection of microfilariae in infected host blood samples and L_3 larvae in mosquitoes.

Keywords: *Setaria digitata*; Cerebrospinal nematodiasis; Diagnosis; Nematoda; PCR

1. Introduction

Setaria digitata is a filarial nematode found in the peritoneal cavity of cattle, buffalo and other ungulates. In these natural hosts, the parasite is considered to be non-pathogenic. However, the transmission of infective larvae (L_3) to abnormal hosts such as goats, sheep or horses could lead to a serious and often fatal disease called cerebrospinal

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