

Serodiagnosis of bovine lungworm infection using a recombinant protein as the capture antigen

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For some time diagnosis of lungworm infection in cattle has been based on the enzyme-linked immunosorbent assay (ELISA) technique. Until recently a Dutch commercial ELISA kit using a sperm derived protein as the capture antigen was available. Since the production of this ELISA was stopped recently, we decided to develop a similar test in our laboratory in collaboration with SVANOVA biotechnology, Uppsala, Sweden. In contrast to the Dutch test, our new test is based on a recombinant version of the major sperm protein (MSP1). As we have seen that lungworms in Sweden are characterised by genetically distinct isolates on different farms, we decided to map the genetic diversity in the MSP1 gene in a collection of worms representing different Swedish field isolates. For comparison we also included a laboratory maintained strain as well as closely related lungworms infecting various wildlife ruminants. Our results shows that there is almost no sequence variation in the MSP1 gene and thus no antigenic diversity between *Dictyocaulus viviparus* worms from different sub-populations or in the other *Dictyocaulus* species investigated. A functional test of a recombinant variant of the MSP showed that the expressed protein was recognised by antibodies in sera from infected cattle.