

NcGRA2 can be used to discriminate between an acute and chronic *Neospora caninum* infection

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Abstract

To understand the epidemiology of *Neospora caninum* associated abortion in cattle it is important to discriminate between those animals that acquire infection exogenously (i.e. through ingestion of oocysts) or endogenously (i.e. transplacentally acquired infection). We have evaluated a series of recombinant dense granule antigens from *N. caninum* with sera from infected cattle. Of these antigens, NcGRA2 elicits an immune response that can be used to discriminate between an acute and chronic infection. The lack of immune response towards NcGRA2 could be the result of antigenic differences

between strains. To rule out any such possibilities we sequenced the NcGRA2 gene from a number of isolates and clinical samples. No differences were seen in either the exons or the intron of NcGRA2 gene among the isolates tested. Thus, it seems unlikely that the differences we observe in the NcGRA2-response are due to structural differences. By combining an ELISA based on NcGRA2 with IgG avidity and epidemiological data it should be possible to make relevant decisions on infection control. More work is needed to design the assay conditions and also to dissect the infection pathway of *N. caninum* and the role of the dense granule antigens