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ANTIGENIC CHARACTERISATION OF MONOCLONAL ANTIBODIES AGAINST SARCOCYSTIS SPP.  
BY IMMUNO-BLOTTING AND IMMUNO-ELECTRON MICROSCOPY

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Sarcocystis spp. are apicomplexan parasites belonging to the so-called "cyst-forming" coccidia. Infections are conventionally diagnosed at post-mortem by the detection of cysts in the musculature either during meat inspection or histopathological studies. Several immunoserological tests have been developed to demonstrate infections, but none have proven specific for individual species of the parasite. Monoclonal antibodies (mAb) were therefore raised against cystozoites of S. muris from mice and S. gigantea from sheep and then characterized by immuno-blotting (Western blots) and immuno-electron microscopy.

Three mAb's raised against S. muris (all IgG<sub>1</sub> subclass) recognized single homologous antigen epitopes of 17,000, 31,000 and 35,000 molecular weight (MW) respectively. These antigens were also recognized by normal immune sera from chronically infected mice. The mAb's did not exhibit any cross-reactivity with antigen preparations of S. gigantea, S. tenella and S. miescheriana. Immuno-EM studies performed with colloidal-gold conjugates demonstrated that the mAb's reacted with pellicular and microneme antigens of homologous species only.

In contrast, three mAb's raised against S. muris (all IgG<sub>1</sub>) and two mAb's raised against S. gigantea (IgG<sub>2a</sub> & IgM) were found to react against multiple antigenic bands ranging from 14,000 to 100,000 MW in homologous species. The mAb's raised against S. gigantea also exhibited cross-reactions with antigenic preparations of several other Sarcocystis spp. Immuno-EM revealed these antigens to be located in or on micronemes and around amylopectin granules of several species.

The varying degrees of specificity found for the different mAb's indicates that evaluation studies should include specificity testing not only against homologous species but also against heterologous or closely-related species prior to their promotion as potential diagnostic reagents or molecular probes.