

Thesis Title Development of Genus and Species Specific
Monoclonal Antibodies Against *Schistosoma*
sp. from *Shistosoma mekongi* Voge et al.,
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ABSTRACT

Monoclonal antibodies (MoAbs) directed against *Schistosoma mekongi* were produced by the *in vitro* fusion of the spleen cells, obtained from mice infected with *S. mekongi* and P3U1 myeloma cells. A total of 388 hybridoma clones were produced and grown successfully in the culture. These hybridom clones were examined for producing specific antibodies against the tegumental antigens of *S. mekongi* by using ELISA technique. Of the 388 clones, 53 stable clones were selected for recloning by limiting dilution method.

Initial characterization of monoclonal antibodies was tested by using immunoblotting assay against tegumental antigens of *S. mekongi*. The clear reaction bands were observed in 13 MoAb clones. Although most MoAbs have been found to bind to rather heterogeneous epitopes ranging from Mr 125 to 29 kDa, there were two MoAbs, namely 5D4-2-1 and 6B2-1-19 which have been found to recognize single epitope at Mr 38 kDa and 97 kDa, respectively. Both 5D4-2-1 and 6B2-1-19 clones were found to secrete IgM antibodies. When these two MoAbs were tested for binding with frozen sections of *S. mekongi* adult male worms by immunofluorescence and immunoperoxidase assays, both of them have been found to recognize the target epitopes on the surface tegument of *S. mekongi* adult worm. Paraffin sections were used with immunoperoxidase assay but the sensitivity of this technique was much reduced. This may be due to the lossening of some antigenic components during the process of paraffin preparation.

In this study, both polyclonal and monoclonal antibodies have been used for characterization of the antigenic epitopes on the teguments of *S. mekongi*, *S. japonicum* and *S. mansoni* adult worms by immunoblotting technique. The polyclonal antibodies did not give any conclusive result. On the other hand, some good results were obtained when 5D4-2-1 and 6B2-1-19 MoAbs were used. The 5D4-2-1 MoAb has been found to react with the Mr 38 kDa epitope of all three species of schistosomes used in

this study. The 6B2-1-19 MoAb reacted specifically with only Mr 97 kDa epitope of *S. mekongi* but not with the other schistosome species. The finding of the genus- and species-specific monoclonal antibodies would provide a useful tool in the field of immunodiagnosis as well as vaccine development.