THESIS TITLE : *ECHINOSTOMA MALAYANUM* : INFECTIVITY, GROWTH, DEVELOPMENT AND IMMUNE RESPONSES IN MICE

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ABSTRACT

This study described the experiments on infectivity, growth and development and fecundity of *Echinostoma malayanum* including host-parasite interaction in mice experimentally infected with metacercariae obtained from naturally infected *Indoplanorbis exustus*. The study was carried out in two experiments, i.e., the single dose infection and reinfection after treatment with 400 mg/kg praziquantel. The results of a single dose infection with 50 metacercariae/animal over 12 weeks period demonstrated very high percentages of worm recoveries (70-84 %) throughout the experiment. The worms grew rapidly during the first three weeks. The maximal body area was found at week 7. Eggs, examined by modified-formalin-ethyl acetate concentration technique, were detected as early at week 2, increased rapidly at week 3 and peaked at week 6.

The levels of parasite-specific IgG and IgA to crude somatic antigen and excretory-secretory (ES) antigen measured by ELISA (Enzyme-linked immunosorbent assay) peaked at week 5 and week 11 post infection respectively.

In the second experiment, mice were infected with 50 metacercariae for two weeks, treated with praziquantel and given reinfection with the same dose one week after treatment. The resistance to reinfection was measured weekly from 1-7 and 10 weeks post treatment. It was found that worm recoveries in the experimental groups (3.6, 5.6) were significantly lower than those in the control groups (36.8, 39.6) during the first two weeks after treatment. The parasite fecundity as measured by egg/gm feces (epg), epg/worm was also significantly reduced at this period. High total pheripheral white blood cell counts were demonstrated in mice challenged at one week post treatment. No correlation of parasite-specific IgG and IgA with the degree of resistance was evident. The resistance appeared to last for two weeks post treatment. The results of this study suggested that the aquired resistance in mice is short-live and it may be concluded that systemic humoral immune response play a little role in eliciting resistance to challenge infection.