

## Study of the Efficacy of Cysteine Protease Inhibitors Alone or Combined with Praziquantel as Chemotherapy for Mice Schistosomiasis mansoni

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**Abstract :** This study was designed for assessment of 3 types of Cysteine protease inhibitors (CPIs) fluromethylketone (FMK), vinyl sulfone (VS) and sodium nitro prussid (SNP), to define which of them is the best? The experiments aimed to define the protective power of each inhibitor alone or combined with PZQ for curing *S. mansoni* infection in mice. In vitro, treated *S. mansoni* adult worms recorded a mortality rate after 1 hr of exposure to 500 ppm of FMK, VS and SNP as 75, 70 and 60%, while, treated cercaria recorded 75, 60 and 50%, respectively. FMK+PZQ treatment recorded the maximum reduction in worm burden (97.2% at 5 wk PI). VS treatment alone or combined with PZQ increases IgM, total IgG, IgG2 and IgG4 levels. In EM study of worm tegument, while only detachment of spines was observed in PZQ treated group, the completely implanted spines were reported in the degenerated tegument of adult worms in all groups treated with CPIs. Treatment with VS+PZQ increased Igs levels but, its effect was different on worm reduction. So, it is not enough to eliminate the infection and FMK+PZQ considered the antischistosomicidal drug of choice.

**Keywords :** praziquantel, fluromethylketone, vinyl sulfone, worm burden, immunoglobulin pattern

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