

**Effects of *Azadirachta indica* and *Entada leptostachya* against *Schistosoma mansoni*  
infection in BALB/C Mice**

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## ABSTRACT

*Schistosoma* species are responsible for causing Schistosomiasis in humans. It is the second most important parasitic infection, after malaria, mainly infecting people in the tropics. It afflicts approximately 207 million people worldwide, 700 million are at risk and causes 500 hundred deaths annually, 85% of the infected are from Africa and majority are children. Praziquantel, which is the effective drug to all schistosomes does not kill all parasites, is expensive and there is the risk of resistance to the drug. The recent resurgence of interest in the study of antischistosomal medicinal plants of local origin is largely based on a self-reliance philosophy. Thus, medicinal plants seem to be an affordable and readily available local alternative source of drugs. The aim of this study was, therefore, to evaluate the antischistosomal properties of *Azadirachta indica* and *Entada leptostachya* extracts on *Schistosoma mansoni* infection as possible leads to drug development. For each of the plants, there were two extracts used; Aqueous [*Azadirachta indica* (AA) Aqueous and *Entada leptostachya* Aqueous(ELA)] and Methanol [*Azadirachta indica* Methanol (AM) and *Entada leptostachya* Methanol (ELM)]. A total of 78 mice were used in the study; 72 in the experimental groups, each with 12 mice and 6 mice were Naïve for IgG ELISA. Mice in groups of six were individually infected with 200 *Schistosoma mansoni* cercariae. Four weeks post infection, they were orally treated separately with 150mg/kg of *Azadirachta indica* and *Entada leptostachya* methanol or aqueous extracts two days apart. Another group of twelve mice were treated with praziquantel (PZQ) as a positive control and there was the infected control (IC) group. At the sixth week, all animals were perfused to evaluate the efficacy of the plant extracts in the treatment of the infection. Worm recovery, pathological, and immunological (cellular and humoral) assays were carried out to measure the antischistosomal activity of aqueous and methanol extracts of the two plants. The

obtained showed a 15.42% maturation of penetrant cercariae. The plant extracts showed no immunological effects on *Schistosoma mansoni* infection in BALB/c mice. In both *Azadirachta indica* and *Entada leptostachya* extracts there was no worm reduction. However, the extracts of *Entada leptostachya* recorded a lower worm burden than the extracts of *Azadirachta indica*. Results showed higher levels of IFN- $\gamma$  responses for all plant extracts which confirmed the severe pathology observed. There were high IL-5 levels attributed to the presence of non-specific schistosome antigens not responsible for protection of the host against the infection. The four extracts stimulated high IgG levels which did not confer any protective immunity and which was not significantly different from IC ( $p>0.05$ ) especially for SWAP antigens.