Schistosomicidal Evaluation of *Zanthoxylum naranjillo* and its Isolated Compounds against *Schistosoma mansoni* Adult Worms


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Chemical investigation of the EtOAc fraction (EF) obtained from the ethanolic extract of *Zanthoxylum naranjillo* (Rutaceae) leaves (EE) by preparative HPLC resulted in the isolation of protocatechuic acid (1), gallic acid (2), p-hydroxybenzoic acid (3), and 5-O-caffeoylshikimic acid (4). This is the first time that the presence of compounds 1–4 in *Z. naranjillo* has been reported. Compounds 1–4, the EE, and EF were tested *in vitro* against *Schistosoma mansoni* adult worms. The results showed that the *S. mansoni* daily egg production decreased by 29.8%, 13.5%, 28.4%, 17.7%, 16.3%, and 6.4%, respectively. Compounds 1 and 3 were also able to separate adult worm pairs into male and female. This activity may be correlated with the reduction in egg production, since 1 and 3 showed better inhibitory properties compared with 2 and 4.

Key words: *Zanthoxylum naranjillo*, Rutaceae, Schistosomicidal Activity