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Sesquiterpenes Effects on DNA of *Schistosoma mansoni* After *in vivo* Treatment.

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ABSTRACT

Schistosomiasis is a chronic Neglected Tropical Disease that can be debilitating, particularly children, of tropical and subtropical regions presenting an enormous global health and economic burden. Notoriously for over 30 years, the praziquantel (PZQ) is the only drug used for treatment of disease. For this reason, the search for new schistosomicidal drugs is a priority. Natural products have played and continue to play an invaluable role in the new drug discovery. In addition, the identification and characterization of molecular markers has been used for direct study of *S. mansoni* genome in different development stage of life-cycle. In this study, we identify light genetic polymorphisms in *S. mansoni* genome, using RAPD-PCR technique, after *in vivo* treatment with metabolites from *B. trimera*, essential oils (EO) and sesquiterpenes, on different stages of development: schistosomula, juvenile and adult of *S. mansoni*. Results showed that five, of the total of twelve evaluated primers, lead to different band patterns, with same monomorphic DNA fragments, from worms recovered after different treatment periods thus suggesting that a single dose (100 mg/kg) of essential oil (EO) and sesquiterpenes (α-HL and T-CP) does not lead to selection of parasites with large DNA genomic polymorphisms both in male or female *S. mansoni* worms. However, despite being preliminary, the molecular results achieved show that further analysis are required to better understand the molecular mechanisms involved. Future application of other molecular markers, in particular, the study of more conserved or specific genes are of a particular interest to verify your hypothesis.

Keywords: Genetic polymorphisms, RAPD-PCR, Sesquiterpenes, *Schistosoma mansoni*, Treatment.