Ultrastructural study on the morphological changes of Schistosoma mansoni after in vitro exposure to monoterpene rotundifolone

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Schistosomiasis, a parasitic disease caused by trematode flatworms of the genus *Schistosoma*, affects more than 200 million people worldwide, and its control is dependent on a single drug, praziquantel. Here, we report the *in vitro* effect of rotundifolone, a monoterpene isolated from *Mentha x villosa* (Lamiaceae), on *Schistosoma mansoni* adult worms. Concentrations of rotundifolone were evaluated *in vitro* against adult worms of *S. mansoni*. Ultrastructural changes on the tegument of these adult worms were evaluated using scanning electron microscopy (SEM). Using rotundifolone at concentrations of 3.5, and 7.0 μg/mL, no worm mortality was observed at any of the times examined. Regarding motility at a concentration of 7.0 μg/mL, minor loss of movement of the tail, suckers, and gynaecophoric canal membrane was observed after 96 h of exposure. At the concentration of 71 μg/mL, mortality and absence of movement of the worms were observed from 72 h onwards, at the concentration of 177.4 μg/mL from 48 h, at the concentration of 354.8 μg/mL from 24 h of exposure (100%). This monoterpene also caused death of all the parasites and the separation of coupled pairs into individual male and female at 354.8 μg mL^{-1} after 24 h. Changes on the tegument of adult *S. mansoni* were evaluated using scanning electron microscopy (SEM). These results suggest that the rotundifolone is very promising for the development of new schistosomicidal drugs.