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#### TITLE

**EVALUATION OF THE MOLLUSCICIDAL AND ANTI-CERCARIAL ACTIVITY OF THE METHANOLIC EXTRACT OF POUTERIA CAIMITO SPECIES ON BIOMPHALARIA GLABRATA INFECTED BY SCHISTOSOMA MANSONI.**

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#### ABSTRACT

Schistosomiasis mansonii, a neglected parasitic disease affecting millions of people worldwide, primarily involves the Biomphalaria glabrata snail as its intermediate host. Biological control of this species and the cercariae released into the water is crucial to interrupting the transmission of the disease. In this context, knowledge of secondary metabolites obtained from medicinal plants with biocidal effects emerges as a promising and environmentally friendly alternative for schistosomiasis control. This study aimed to evaluate the molluscicidal and anti-cercarial activity of the methanolic extract of the species Pouteria caimito on Biomphalaria glabrata infected by Schistosoma mansonii. As a methodology, the P. caimito species, popularly known as Abiu, was initially collected. The crude methanolic extract was obtained, and a phytochemical screening was carried out through chemical reactions resulting in color development and/or precipitation, characteristic for identifying metabolites such as flavonoids, tannins, saponins, steroids/triterpenoids, alkaloids, leucoanthocyanidins, and anthraquinones. The cytotoxic activity (Lethal Dose - LD) of the plant was then evaluated with the microcrustacean Artemia salina at concentrations of 0.625 mg/mL, 1.25 mg/mL, 2.5 mg/mL, and 5 mg/mL. For evaluating the molluscicidal and anti-cercarial activity on B. glabrata infected and non-infected by Schistosoma mansonii, concentrations of 0.625 mg/mL, 1.25 mg/mL, and 2.5 mg/mL of the P. caimito extract were used. The results of the cytotoxicity assay showed an LD above 90% at the concentration of 2.5 mg/mL of the extract. In the molluscicidal activity, regardless of the concentration, mortality of the snail was observed between 20% and 33%. Regarding the anti-cercarial activity, the concentration of 2.5 mg/mL prevented the release of cercariae by the infected snail. Although the preliminary results suggest that P. caimito may be a promising source for the biological control of schistosomiasis through the destruction of cercariae and low snail mortality, other concentrations should be tested to avoid compromising the biome in which B. glabrata is inserted.

#### KEYWORDS

Schistosomiasis; Biomphalaria glabrata; Pouteria caimito.

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