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Phytotherapy from *Mentha piperita* L. modulates infection during experimental schistosomiasis

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Schistosomiasis is a chronic parasitic disease promoted by the parasite of the genus *Schistosoma*, and Praziquantel (PZQ) is the only drug recommended by the World Health Organization, but there are reports of resistance, suggesting the importance of studying new compounds to treat this disease. In this work, we investigate the immunomodulatory and antiparasitic effects of Mentaliv (Apsen), from *Mentha piperita* L. during murine infection by *S. mansoni* (Sm). Experimental groups: Balb/c females, C, uninfected, SM, infected without treatment, Mentha 15 (50 mg/kg) infected with Sm (80 cercariae/animal), Mentha 60 (50 mg/kg), infected and treated daily for 60 days and PZQ, infected and treated with single dose (400 mg/kg) at the 43rd day after infection. The cell profile in the blood and serum IL-4 and IL-10 cytokines were analyzed. And the antiparasitic effect on egg count in the liver, intestine and granulomas, and comet assay for DNA modifications in worms recovered after treatments. Mentaliv phytotherapy has immunomodulatory and antiparasitic effects during murine infection of experimental schistosomiasis, by reducing serum levels of IL-4 and IL-10, and indirectly modulating negatively the blood eosinophils in the Mentha 60 group. In addition, there is an antiparasitic effect in these animals of the Mentha 60 group where there is a reduction in the number of eggs in the liver, intestine and in the hepatic granulomas. However, the absence of the genotoxic effect on Sm, suggests that other structures of the parasite other than DNA are being altered and thus contributing to the reduction of parasitic load. Thus, it is suggested that menthol and menton may be the main components of *Mentha piperita* L. with antiparasitic effect in this model.

Biography

Fernanda F Anibal has completed her PhD from University of São Paulo, Brazil in Basic and Applied Immunology. She is a Principal Investigator at Laboratory of Inflammation and Infectious Diseases (Federal University of São Carlos) seeks new tools for the treatment, prevention and diagnostics for infectious diseases. Currently, they are working with two plants and six enzymes and their effects against Schistosomiasis mansoni, leishmaniasis and toxocariasis, about the treatment of the infectious diseases. Their group studies effects of plants (extracts) and their isolated fractions to evaluate the anti-parasitic and anti-inflammatory effects and for infectious disease prevention, moreover have been working on the evaluation of the proteins of the parasite that has been potential to induce immune responses that decrease the parasite burden.

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