Anti-\textit{Trichomonas vaginalis} activity of plants traditionally used by indigenous group in South Brazil

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Introduction: Natural products have been source of the greater number of active compounds along the years and traditional use of medicinal plants is a powerful tool in this investigation. Indigenous populations have a wealth of biodiversity (Ríos, J. Ethnopharmacol., 100, 80, 2005). Considering the ethnopharmacology information, the aim was investigate anti-\textit{Trichomonas vaginalis} activity of medicinal plants used in indigenous medicine in South of Brazil tribe. Importantly, \textit{T. vaginalis} is a flagellated protozoan that causes trichomonosis, a common but overlooked sexually transmitted disease (STD). This infection is considered the most common non-viral STD in the world and it is associated with serious health complications (Petrin, Clin. Microbiol. Rev., 11, 300, 1998).

Experimental part: Ten aqueous extracts were prepared by decoction and screened for anti-\textit{T. vaginalis} activity at 4.0 mg/mL. ATCC30236 isolate was incubated with extracts to verify the effect on parasite growth. Hemolytic activity was evaluated. The experiments were performed in triplicate with at least three different conditions.

Results and Discussion: Among the aqueous extracts tested, \textit{Verbena} sp. and \textit{Campomanesia xanthocarpa} showed the highest activity against \textit{T. vaginalis} with MIC value of 4.0 mg/mL reaching 100\% of parasite viability reduction. The kinetic growth assays showed that the extracts promoted completely growth abolishment after 4 h of incubation. In addition, the extracts tested did not promote a significant hemolytic activity indicating that the mechanism of action responsible for the cytotoxic effect probably does not involve parasitic membrane disruption. Moreover and importantly, these findings suggest that both extracts are not toxic to mammalian cells, since they did not lyse human erythrocytes.

Conclusion: Our results show for the first time the potential activity of \textit{Verbena} sp. and \textit{C. xanthocarpa} against \textit{T. vaginalis}. In addition, this study demonstrates that indigenous knowledge is an important source of new prototype antiprotozoal agents.

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