EVALUATION OF THE ANTI-*Leishmania amazonensis* AND CYTOTOXIC ACTIVITY OF THE AQUEOUS EXTRACT OF *Echinacea purpurea* (L.) MOENCH

EVERTON DOS SANTOS GOMES[1], THALITA BACHELLI RIUL[2], RAFAEL FRANCISCO ROSALEM[2], LARA NICOLLY DIAS SANTANA[1], CARLA CARDOZO PINTO DE ARRUDA[2], MARCELO BIONDARO GOIS[2], LUDIELE SOUZA CASTRO[2]

[1]FEDERAL UNIVERSITY OF RONDONÓPOLIS, MATO GROSSO, BRAZIL, [2]FEDERAL UNIVERSITY OF MATO GROSSO DO SUL, BRAZIL

Leishmania amazonensis plays a fundamental role in the prevalence of leishmaniases, being involved in the manifestation of cutaneous leishmaniasis in 12% of cases in Latin America, with reports of cutaneous, diffuse, mucosal, and visceral involvement. Case studies report that patients infected with *L. amazonensis* may exhibit resistance to conventional treatments, raising the need for the development of new effective drugs. *Echinacea purpurea* is a medicinal plant explored due to its numerous phytoconstituents, which have already demonstrated dose-dependent activity against *L. donovani* and *L. major*. Although the biological activities of *E. purpurea* depend on the preparation method, it shows potential for biotechnological exploration and enhancement. Thus, the present study evaluated the anti-*Leishmania amazonensis* activity of the aqueous extract of *E. purpurea*.
The study consisted of an in vitro antiparasitic evaluation using *L. amazonensis* (PH8) promastigotes and NIH/3T3 cells for cytotoxicity.
Anti-*Leishmania amazonensis* activity was obtained only at concentrations of 500 and 1000 µg/mL, with an inhibitory percentage of 41.87%. Regarding the cytotoxic profile, the aqueous extract of *E. purpurea* did not present considerable toxicity (IC_{50} > 1,000 µg/mL).
The results obtained here support previous studies reporting a broad spectrum of action. The study found a limitation regarding the concentration range tested; however, the low cytotoxicity allows for the exploration of this extract at new concentrations. The findings of the present work encourage future studies investigating the phytochemical properties of *E. purpurea* and the compounds involved in anti-*Leishmania* activity.
In light of the above, it can be said that *E. purpurea* possesses promising molecules for the development of new drugs or the refinement of conventional ones.

Supported by Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)

Keywords: Natural Products, Leishmaniasis, Botanic Extracts