

TITLE: EVALUATION OF THE LEISHMANICIDAL ACTIVITY OF METABOLITES PRODUCED BY ACTINOMYCETES AGAINST *LEISHMANIA INFANTUM*.

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ABSTRACT:

Leishmaniasis is a parasitic disease caused by the flagellate protozoan of the genus *Leishmania*, is transmitted by a vector belonging to the family Psychodidae and genus *Lutzomyia* (straw mosquito). The treatment, although already used for more than 60 years in patients affected, is often ineffective because it is based on extremely cytotoxic drugs that contribute to the abandonment of the treatment by the patient. The present study aims to evaluate the leishmanicidal activity of metabolites extracted from actinomycetes against *Leishmania infantum*. The metabolites F2 were prepared in Laboratório de Microbiologia Ambiental da Universidade Ceuma which extracted with Ethyl Acetate, solubilized in Dimethyl Sulfoxide (DMSO) and diluted in culture medium at different concentrations. Promastigotes forms were incubated in the presence of different concentrations (100 to 6.25 µg/ml) of the F2. The concentration of metabolite necessary to inhibit 50% of the promastigote growth was determined by cell counting after 72 hours of incubation with metabolites by linear regression analysis. The culture growth was monitored daily by counting in a Neubauer chamber. Each test will be done in two independent experiments in triplicate. The metabolite tested showed leishmanicidal activity in different concentrations, since in the highest concentration the metabolite was able to inhibit more than 80% of the growth and at the lowest concentrations it was able to inhibit between 30% - 59% of parasite growth. The IC 50 was calculated using the linear regression test in the SPSS statistical program and presented a value of 35.9 µg/mL. Although more tests are needed to assess the cytotoxicity and the effects of F2 metabolite on the amastigote form, our results indicate that the tested compound is promising against visceral leishmaniasis.

Keywords: Leishmaniasis; Leishmanicidal activity; Metabolites.

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