TITLE: ANTIPROTOZOAL EFFECT OF FLUOPSIN C ON EPIMASTIGOTE FORMS OF *TRYPANOSOMA CRUZI*

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ABSTRACT:

Chagas Disease (CD) is a neglected tropical disease, caused by the protozoan *Trypanosoma cruzi*, affecting approximately 7 million people worldwide. The parasite has a heteroxenic life cycle, involving mammalian and triatomine hosts. The treatment for CD is limited to only two drugs, which have adverse effects, making it necessary to search for new substances with trypanocidal activity. In this study, the antiprotozoal activity of Fluopsin C (FC), a metabolite obtained from the culture of *Pseudomonas aeruginosa* LV strain, was evaluated on epimastigote forms of *T. cruzi* Y strain. First, the epimastigote forms were incubated in the presence of FC at varying concentrations from 0.12 µg/ml to 2.00 µg/ml for 72 h at 28°C. Untreated epimastigote cultures were used as growth control. After this period, the effect on cell growth was determined by directly counting the number of epimastigotes. FC inhibited the replication of epimastigote forms, presenting an IC_{50} and IC_{90} (the lowest concentration capable of inhibiting cell proliferation by 50% and 90%, respectively) equal to 0.416 µg/mL and 1.5 µg/mL, respectively. The effect of FC on lipid peroxidation was evaluated by spectrofluorimetry using diphenyl-1-perenylphosphine (DPP) as a marker. Epimastigote forms treated with IC_{50} and IC_{90} of FC showed an increase in lipid peroxidation of 35.9 times (arbitrary units) 362.1 times, respectively, when compared to the untreated control cells. Furthermore, an increase in the number of epimastigote forms labeled with propidium iodide (PI) was observed after treatment with FC at both concentrations, indicating damage to the cell membrane. The results show that Fluopsin C had a trypanocidal effect on epimastigote forms of *T. cruzi* Y strain, interfering with cell membrane stability by increasing lipid peroxidation, resulting in its disruption and parasite death.

KEYWORDS: Fluopsin C, Chagas Disease, *Trypanosoma cruzi*, trypanocidal agent.

DEVELOPMENT AGENCY: CAPES, CNPq