

## EFFECT OF *CRATYLIA MOLLIS* SEED LECTIN ON MITOCHONDRIAL FUNCTION AND *T. CRUZI* EPIMASTIGOTES VIABILITY

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Lectins are proteins broadly distributed in nature that present the ability to specifically bind carbohydrates. *Cratylia mollis* seed lectin (Cramoll 1,4) presents molluscicidal activity against *Biomphalaria glabrata* snail. This work was aimed at evaluating whether Cramoll 1,4 has toxic effects on mitochondrial function and *Trypanosoma cruzi* epimastigotes viability. Cramoll 1,4, in the concentration range of 1 to 50 µg/ml, presented cytotoxic effects on the epimastigotes (Tulahuen 2 strain, 1.25x10<sup>8</sup> cells/ml) as evidenced through the MTT method. Using flow cytometry technique with annexin V or propidium iodide probes it was observed that incubation with Cramoll 1,4 (20 µg/ml, 5 h) promoted apoptosis in 21% and necrosis in 2.5% of the epimastigotes, respectively. At this concentration, lectin significantly decreased both mitochondrial respiration and membrane potential ( $\Delta\Psi_m$ ) and induced permeabilization of parasite plasma membrane as determined by the safranin O method. Cramoll 1,4 caused a significant glucose-sensitive increase in reactive oxygen species (ROS) generation. We conclude that Cramoll 1,4 toxicity to *T. cruzi* epimastigotes may result from a concerted action on parasite plasma membrane, mitochondrial function and ROS generation.

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