

A New Bioprospection Potential of *Ectatomma opaciventre* Ant Venom: Biological Characterization

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Introduction: Ant venoms exhibit various functions and biological roles, however, there is still a lack information about its composition and biological properties. *Ectatomma opaciventre* is one of the less known species. **Objective:** In this context, the aim of this study was to characterize the biochemical venom of *Ectatomma opaciventre*, a new reserve bioactive compound to be explored. **Methods:** Venom gland was pinched out and placed in a microtube with 15% acetonitrile (ACN), 0.1% trifluoroacetic acid (TFA) / distilled water. The glands were disrupted by ultrasonic waves and centrifuged at 320 × g for 2 min. Total protein was measured by Bradford assay, SDS-PAGE and peptide gel electrophoresis were performed with different concentration of venom. Clotting, Phospholipase A₂, hemolytic, hialuronidase, on different substrates (hyaluronan, chondroitin-4-sulphate, dermatan or chondroitin-6-sulphate), thrombolytic, zymographic, azocaseinolytic and fibrinogenolytic activities were performed as described in the literature using different concentrations of venom according to the sensitivity of each method. To describe its functional properties we made cytotoxicity (MTT assay) over different *Leishmania spp.* and cancer cells. **Results and Discussion:** The results obtained reveal that the venom of *Ectatomma opaciventre* ant is a rich source of unexplored molecules. SDS-PAGE showed several compounds with masses ranging from 1-116kDa, highlighting the complexity of this venom. Clotting and fibrinogenolytic assays did not demonstrate activity with the concentration tested. The enzyme assays demonstrated the presence of some class of protein in the venom, hialuronidase, protease and phospholipase, since it was observed a high enzyme activity. About its functional characterization, the ant venom was highly cytotoxic to *Leishmania spp.* and cancer cells in different concentrations. **Conclusion:** Therefore, this work shows that *Ectatomma opaciventre* ant venom can be object of further research for elucidation of unexplored biodiversity of ant venom compounds and find a new scenario of bioprospecting of toxins with biotechnological interest.

Keywords: *Ectatomma opaciventre*, Ant Venom, Biological Characterization

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