Foam Nest of *Leptodactyus vastus* and Lv-RSN-1: Accessing the Proteome and Tissue Immunolocation

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INTRODUCTION. Some amphibian species have developed a breeding strategy in which they deposit their eggs in stable foams nests in order to protect the eggs and larval development. In spite of the fascinatingly properties related to the amphibian foam nests only few studies have been published concerning biochemical composition, molecular pathways underlying their syntheses and long-term stability. *Lv*-ranaspumin (Lv-RSN-1) is a natural surfactant protein with a molecular mass of 23.5 kDa, which was isolated from the foam nest of the frog *Leptodactylus vastus*. Its structural conformation shows to be distinct from any protein structures yet reported. **OBJECTIVES.** The aim of the present study was to further characterize the *L. vastus*'s foam nest by accessing its proteome and Lv-RSN-1 by tissue immunolocation. **MATERIAL AND METHODS.** Foam nests and adult specimens of the frog *L. vastus* were collected in Campus do Pici, UFC, Brazil. For western blotting, proteins were loaded in Tricine-SDS-PAGE and transferred to PVDF membrane. Then, membrane was incubated with Lv-RSN-1 antiserum and then with goat anti-rabbit IgG conjugated with alkaline phosphatase. Two-dimensional electrophoresis was carried out by loading the proteins on immobilized pH gradient 3 – 10 and 4 – 7 linear gel strip. **RESULTS AND DISCUSSION.** The two-dimensional electrophoresis shows a high diversity of proteins in the foam nest and Lv-RSN-1 presented pI around 5,7 and presented at least five isoforms. Western Blotting showed that Lv-RSN-1 is mainly produced in the posterior enlarged region of the female organ oviduct. **CONCLUSIONS.** The biochemical composition, molecular pathways underlying their syntheses and long-term stability of frog foam nests are still not completely understood, as well as the behavior of natural surfactant proteins such as ranaspumins. In that way, this study provides new insights into the characterization of the frog foam nest surfactant protein Lv-RSN-1 and opens new avenues for its biotechnological applications.

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