

ACIDIC AMINOACIDS IN THE N-TERMINUS OF PRO-TRIALYSIN FOUND IN SALIVA OF TRIATOMA INFESTANS IMPAIR LYTIC ACTIVITY OF TRIALYSIN

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Triatoma infestans (Hemiptera:Reduviidae) is an hematophagous insect that transmits the protozoan *Trypanosoma cruzi*, the etiological agent of Chagas' disease. Its saliva contains anti-haemostatic molecules including trialysin, a protein that forms pores in membranes. Peptides based on the N-terminus of trialysin lyse cells and fold into alpha-helical amphipathic segments resembling antimicrobial peptides. Since it is active against a broad range of cell types, its storage/secretion/activation should be strictly controlled. By using a specific antiserum against trialysin we show that a precursor larger than the mature protein is found in the salivary glands. This pro-trialysin is less active than trialysin and is converted into mature trialysin by limited proteolysis after saliva secretion. A synthetic peptide flanked by a fluorophore and a quencher including the acidic portion of the proregion and the N-terminus of the protein is also less active against cells and artificial membranes. Upon proteolysis by triapsin, the most abundant protease from *T. infestans* saliva, or ArgC endoproteinase, the peptide unfolds and increases its lytic activity. This mechanism of activation could provide a way to impair the toxic effects of trialysin inside the salivary glands, restricting lytic activity to the bite site. Keywords: hematophagous saliva, lytic protein, trialysin.