

## PROBABLE PROTEIN INVOLVED IN THE MECHANISM DE PARALYSIS CAUSED BY TICK *Ornithodoros brasiliensis* (ACARI: ARGASIDAE)

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The species *Ornithodoros brasiliensis* (Aragão, 1923) is endemic from southern Brazil, is a tick of the Argasidae family. It is very aggressive to humans, causing fever, pain and intense inflammatory reaction in the bite site, and in dogs causes paralysis in the lower limbs. There are many species of ticks that can cause a pathological effect on their hosts by inoculating non-infectious salivary components. This pathological effect is called toxicosis associated to the feeding of the tick, being the main form of toxic the paralysis. The *Caenorhabditis elegans* were chosen as the model for paralysis activity test. The primary objective of this research was to identify and isolate native proteins with paralyzing activity obtained from the salivary glands of tick *O. brasiliensis*. The colony was kept in a controlled environment chamber (BOD). They were fed with artificial feeding (CEUAIB N° 1390/15). The salivary glands were collected after tick feeding and kept in an ultra-freezer (-80°C) until the day of processing. The protein concentrations of salivary gland extract (SGE) and fractions were determined by A 280 nm (NanoDrop). SGE samples were submitted to Resouce Q (1mL) – GE chromatography in FPLC system (ÄKTA- GE,) were formed 11 pools, dialyzed against 5 mM Tris/1mM NaCl and concentrated in a freeze-dryer. Later, the samples were analyzed by SDS-PAGE 12, 5 %. For paralysis activity tests, *C. elegans* (CEUAX 3674070218) were added to a 96-well plate containing the pool and observed by Stereomicroscope Nikon SM 27457. Preliminary Proteomic studies were performed by RP-LCMS/MS and resulting spectra were searched against an ESTs database and cDNA library from the salivary gland of ticks. The revealed SDS-PAGE 12.5% bands of SGE and pools had molecular mass between 15 and 100 kDa. The P7 (23 ng) and P8 (49 ng) were evidence of decreased movement of *C. elegans*. Proteomic analysis indicates the presence of several proteins, and among them the neprilysin, a protein related to nervous system in *C. elegans*, in the active fraction. Although the results are still preliminary, they may represent important findings on the mechanism of toxicosis developed by this tick. Since this protein inactivates several nociceptive pathways. Further study will clarify the mechanisms of host tick adaptation during a development.

Keywords: *Caenorhabditis elegans*, proteomic analysis, SDS-PAGE, toxicosis.  
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