

A MITOCHONDRIAL EXOPOLYPHOSPHATASE ACTIVITY IN *RHIPICEPHALUS*
(*BOOPHILUS*) *MICROPLUS* EMBRYOS

Eldo Campos¹, Arnaldo R. Façanha¹, Aoi Masuda², Itabajara Vaz Jr.² and
Carlos Logullo¹

1) Laboratório de Química e Função de Proteínas e Peptídeos and Laboratório de
Biologia Celular e Tecidual – CBB – UENF, Campos dos Goytacazes, RJ, Brazil.

2) Centro de Biotecnologia / UFRGS, Porto Alegre, RS, Brazil.

The tick *B. microplus* is an important cattle ectoparasite that is recognized worldwide as vectors of arboviruses and parasitic protozoa. The embryogenesis occurs around 21 days after egg laying and knowledge of the processes involved in embryonic development may unravel additional targets that could be effective in the control of this ectoparasite. Polyphosphates are energy-rich polymers of up to several hundreds of orthophosphate residues, its biological function is uncertain and the major enzyme participating in polyP metabolism is exopolyphosphatase. The present work evaluates exopolyP activity in mitochondria of *B. microplus* embryos. Mitochondria were isolated by differential centrifugation and the exopolyP activity was analyzed through the hydrolysis of the substrate PolyP₁₅. The PolyP hydrolysis was stimulated by NADH up to two times, while NAD⁺ had a minor effect. On the other hand, 2 mM Pi strongly inhibited this activity whereas ADP stimulated it by only 35 %. The mitochondrial polyP depletion and exopolyP activity were analyzed during embryogenesis and both increase progressively until 7th day of development. The obtained results will help us to better understand the polyphosphate metabolism during the *B. microplus* embryogenesis. Supported by **PRONEX, FAPERJ, CNPq and CAPES**