

Partial Characterization of Protein Phosphatases in *Oncopeltus fasciatus*.

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The milkweed bug, *Oncopeltus fasciatus* is a plant feeding hemiptera. This bug has been used in physiological and biochemical studies and has proven to be a useful insect model system for developmental studies since they are easy to rear and have a short life cycle. Signaling cascades are triggered by external signals and the final target of every cell-signaling pathway involves the reversible phosphorylation of proteins. The protein phosphorylation state is determined by opposite activity of protein kinases and phosphatases. Phosphatases are enzymes that catalyzes the reaction of protein dephosphorylation. The present study was designed to identify and characterized phosphatases presents in the *O. fasciatus* gut and fat body. The insects were kept in plastic pitchers at 26°C and fed with sunflower seeds and fresh water. Adult insects were carefully dissected and the phosphatase activity was characterized using pNPP as substrate. The gut and fat body were homogenized, freeze/thaw and centrifuged. The homogenates were used to determine the pH optimum, protein concentration and time course. The maximum activity appeared in an acid pH (4.0-5.0). The molecular size of the enzyme in these tissues was analyzed by HPLC. The phosphorylation profile from insects gut and fat body was determined and we observed a significantly tyrosine phosphorylation. This is the first report of protein phosphorylation in these insects. Now, we are working in isolation these phosphorylated proteins by bidimensional electrophoresis and submitted then to mass spectrometry. Supported by FAPERJ and CNPq.