Histological characterization of digestive tract of *Aedes aegypti* larvae.

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Many surveys are designed to identify substances or microorganisms capable of controlling the population of insects that are important to public health, and the identification of resulting histological injures is a criterion for understanding the mechanism of action and the efficacy of the product. The histopathological analyses are based on the comparison between tissues of control subjects and exposed subjects, but there are rare studies that mention the state of healthy tissues. The objective of this work was to characterized the main morpho-histochemically healthy tissues of the digestive system of larvae in the 3rd and the 4th instar of *Aedes aegypti*, showing several images of the variations that can be expected, as well as displaying processing techniques. A total of thirty larvae were fixed, dehydrated and embedded in historesin. Sections were stained with hematoxylin for morphology and Blue Nile, bromophenol blue, toluidine blue and PAS staining for the immunohistochemical characterization. As a result, the intestines of the larvae showed an upright tube formed by a single layer of cuboidal cells, moderately acidophilic, with a central nucleus and a brush border facing the lumen. Cellular changes were recorded, since epithelial cells also secrete digestive enzymes. Sequential histological sections were important in defining the morphology, since the angle and height of the sections may affect its appearance. The PAS revealed the presence of many glycogen granules in all tissues, including the secretory vesicles. These still have protein and were weakly colored to lipids. There were no metachromasia events in red with toluidine blue, though the tissues seem to blush differently from the integument. This study enabled a better understanding of cellular differences that occur throughout the intestinal tract of healthy larvae of *A. aegypti* when treated with chemical compounds, isolated products of plants, as well as for biological studies with microorganisms.

Palavras-chave: *Aedes aegypti*, histology, histochemistry.

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