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**LS-7-P-5713 Localization of acid phosphatase activity in sperm of Triatoma brasiliensis (Insecta, Reduviidae, Triatominae)**

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The cytochemical study is useful to determine the functional role of different elements of the spermatozoa, in its movement and in the fertilization process, and particularly to detect the role of enzymes in sperm development. The present study analyses the localization of acid phosphatase in spermatozoa of *T. brasiliensis*, which is the most important Chagas disease vector in the semi-arid areas of Northeast Brazil. Adult males were dissected and its seminal vesicles removed and fixed in 1.5% glutaraldehyde solution in 0.1 M sodium cacodylate buffer at pH 7.2 during 30 min at 4 °C, and washed in the same buffer for an equal period, followed by incubation at 37°C for 1 h in the medium: Tris-maleate buffer 1mM, pH 5.0, sodium beta-glycerophosphate 1mM, saccharose 5% (p/v) and CeCl₃ 2mM. Controls were incubated in the medium without sodium beta-glycerophosphate, but otherwise prepared in the same manner. The vesicles were post-fixed in 1% osmium tetroxide in cacodylate buffer for 1 h. Dehydration was carried out in an ethanol series and propylene oxide and embedding in Epon 812. Ultrathin sections were stained with uranyl acetate and lead citrate and observed under Transmission Electron Microscopy Jeol JEM 1011 of Electron Microscopy Platform of Oswaldo Cruz Institute, FIOCRUZ, RJ. In spermatozoa stored in the seminal vesicles, the phosphate of lead deposits are located specifically in axonema, on the radial spokes extending from the central pair of microtubules to the outer pairs 9 and the connection of accessory microtubules (Fig. 1-4). The intensity of the response varies from one to another axonema and also between the fibers of a single axonema. These results indicate that acid phosphatase appears to be involved in phosphate metabolism important for flagellar motility, since this enzyme activity begins only after acquiring all its axonema microtubules and connecting fibers and to be fully equipped for movement.

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Fig. 1: Transverse section of spermatozoa. In the axoneme, the lead deposits are very dense on the radial spokes (arrow) between the central pair of microtubules and the nine peripheral doublets. N: nucleus.

Fig. 2: Transverse section of spermatozoa. In the axoneme, the lead deposits are very dense on the radial spokes (arrow) between the central pair of microtubules and the nine peripheral doublets. MD: mitochondrial derivates.

Fig. 3: Longitudinal section of axoneme. Lead phosphate deposits are evident on the radial spokes (arrow). N: nucleus.

Fig. 4: Prepared control, with spermatozoa showing no enzymatic reaction product (arrow). Ax: axoneme.