

HISTOLOGICAL LOCALIZATION OF HEPARIN IN THE CRUSTACEAN *UCIDES CORDATUS*

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Several studies about heparin in mammalian tissues show this glycosaminoglycan is mainly located in regions in contact with the external environment. Although heparin contributes to numerous cellular mechanisms in vertebrates, little is known about its function and site of synthesis in invertebrate phyla. Though the physiology of heparin in invertebrate systems may differ from that in vertebrates, it is possible that it has similar roles in both vertebrates and invertebrates. In a previous study we showed its histological localization in the clam *Anomalocardia brasiliensis*. In this study, we localized heparin in the crustacean *Ucides cordatus* (crab) by light and fluorescence microscopy and characterized the cells in which it is synthesized to gain insights into its potential physiological role. Previously identified in this crab, heparin was first extracted from the dissected animal (gill, hepatopancreas, legs muscles and flanc) and characterized by its electrophoretic migration in different buffer systems. The cellular location of heparin was identified histologically by berberine, toluidine blue and alcian blue/P.A.S. staining. A survey of various organs indicates that heparin was found in several morphological cell subpopulations of the hepatopancreas and gill. Cells containing these compounds were restricted to areas proximal to epithelial surfaces and granules were observed in all cell types. The “mast-like” cells that we report here may play a role analogous to that of mammalian mast cells, using heparin proteoglycan as a supportive defense molecule.

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