

3-1-4. Fine Structure of Heart Tube and Its Hemocytes in the Mealworm Beetle, *Tenebrio Molitor*

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The heart tube in beetle lies along the median line of abdominal part. The aim of this study is examine the fine structural organization of the heart tube and its hemocytic composition in the *Tenebrio molitor* (Coleoptera: Tenebrionidae), with the aids of scanning and transmission electron microscopes. Among the three typical layers (epicardium, muscles, and endocardium) of heart tube, both of epicardium and endocardium which commonly composed of single layer of flattened cells encircle the muscle layer concentrically. Bundles of myofibrils distributed along the circular direction of the heart tube, and each muscle fiber conjoined together at an intercalated disc. By the hexagonal combination of the thick myosin and thin actin myofilaments, a peculiar striation patterns can be formed. Within the luminal surface of the heart tube, several types of hemocytes which are prohemocytes, plasmatocytes, two subtypes of granulocytes, and coagulocytes are finally identified. By comparison of the hemocytic fine structure, this paper also demonstrate the evidences that several characteristics of the luminal hemocytes are somewhat different those of circulating ones.