
МАТЕРИАЛЫ КОНФЕРЕНЦИИ
И ШКОЛЫ

**CIRCULATING HEMOCYTES: PHYLOGENESIS, ONTOGENESIS
AND THE FORMATION OF MONOFUNCTIONALITY**

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The main result of studies carried out on representatives of three taxa (Mollusks, Echinoderms, Ascidia) is the extension of the main provisions of the teachings of L.A. Orbeli to the system of circulating hemocytes. All the numerous morphotypes of mollusk and echinoderm hemocytes are stages of the development of a single cell, which acquires new properties during maturation and the formation of monofunctionality: from the ability to migrate and phagocytosis (as the most ancient ancestral and always preserved functions) to participate in the restoration of integuments, coagulation of hemolymph in response to an injury. In ascites during ontogenesis, two cell lines are laid immediately, one of which is associated with the repair of integuments and coagulation of hemolymph, and the other with the appearance of specialized phagocytes; the formation of circulating stem cells (hemoblasts) is also associated with this line, which reflects the beginning of the transition to a closed circulatory system. For circulating hemocytes of representatives of all studied taxa, the principle of heterochrony is

fully valid, i.e. the formation of different cell functions as one differon develops. An example of an increase in intersystem regulatory interactions with the development of the organism is cell cooperation during the reparative process in ascidia, which confirms the emergence of new functions of the vascular epithelium and increased integrative influences of the nervous system. Thus, the monofunctionality of circulating hemocytes is phylogenetically based on the phenomena of migration and phagocytosis as trophic functions, and after the formation of a liquid internal medium it provides the appearance of cells responsible for hemolymph coagulation and thrombosis. A change in the protection strategy from population to individual leads in larval chordic ascidia to a new vector of hemocyte monofunctionality (from cambial circulating hemoblasts to specialized phagocytes), which emphasizes the physiological unity of protective and reparative functions.

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