

ERYTHROCYTES IN MAMMALS (ORDER RODENTA): MORPHOMETRIC STUDY

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Blood erythrocytes play a central role in gas-transport function and providing oxygen to the tissues. The number, size and surface of erythrocytes are of decisive importance in the oxygenation of tissues. The parameters of the surface of erythrocytes in different species are quite diverse and depend on some of conditions. Previously (Galantsev, 1977; Kostelecka-Myrcha, 2002), it has been shown that the size of erythrocytes is dependent on the conditions of existence, lifestyle, phylogenetic position and body weight of mammals.

A comparative study of the morphology and morphometric parameters (surface area and diameter) of blood erythrocytes in mammals of Rodenta: *Castor fiber* (n = 2), *C. canadensis* (n = 3), *Myocastor coypus* (n = 12), *Ondatra zibethicus* (n = 10), *Rattus norvegicus* (n = 17), *Chinchilla lanigera* (n = 12), *Sciurus vulgaris* (n = 4), *Myodes glareolus* (n = 1), *Arvicola terrestris* (n = 3), *Mus musculus* (n = 9) was conducted. A significant variability in the size of erythrocytes is established. On blood smears, the greatest cellular surface area was found in *C. canadensis* and *C. fiber* – $54.76 \pm 0.26 \mu\text{m}^2$ and $53.33 \pm 0.24 \mu\text{m}^2$, respectively. Immature erythroid cells were revealed on blood smears in some Rodenta species: normoblasts in some individuals of *C. canadensis*, polychromatophilic forms in *O. zibethicus* and *A. terrestris*. Large forms of erythrocytes were found in all species of the group of diving animals. For animals that can hold their breath, the area of erythrocytes, along with the level of hemoglobin and the oxygen capacity of the blood, is an essential physiological characteristic. We noted that the larger the size of semi-aquatic animals, the higher the its morphometric parameters of erythrocytes. Apparently, the size of red blood cells is more influenced by the adaptation of animals to the aquatic environment than their phylogenetic

relationship. In the water voles, a semi-aquatic species, the average area of erythrocytes is higher ($33.09 \pm 0.09 \mu\text{m}^2$) than that of the related bank voles ($24.23 \pm 0.16 \mu\text{m}^2$). The area of erythrocytes of terrestrial rodents varied in the range from $31.16 \pm 0.09 \mu\text{m}^2$ to $34.95 \pm 0.08 \mu\text{m}^2$ and decreased in the sequence *C. lanigera* – *R. norvegicus* – *S. Vulgaris* – *M. Musculus* – *M. glareolus*. For all studied species, significant sex differences in the diameter and surface area of erythrocytes have been revealed.

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MORPHOFUNCTIONAL ORGANIZATION OF BLOOD CELLS AT SOME REPRESENTATIVES OF THE FAMILY CERVIDAE IN NORTH EUROPE

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At present, the relationship between physiological-biochemical and hematological parameters with the dynamics of population density is widely discussed (Davis et al., 2008; Scanes, 2016). An important part of hematological studies is the study of the count, morphological features and morphometric parameters of blood cells. These methods are extremely informative in assessing the physiological status of mammals and allow us to evaluate about the degree of influence of various factors, including unfavorable ones. The aim of the study was to study the morphofunctional organization of blood cells of wild game animals by the example of representatives of the family Cervidae.

The subjects of the study were adult individuals of moose (*Alces alces*) and forest reindeer (*Rangifer tarandus fennicus*), which inhabited in nature in the Republic of Karelia. Based on previous studies, it is known that in moose, the ratio of lymphocytes and