

Influence of the geochemical background of the Western Caspian region of Azerbaijan on acid-base balance regulation of *Pelophylax ridibundus* (Pallas, 1771) (Amphibia, Ranidae) blood

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Abstract. This research paper examines the influence geochemical specifics of habitats on acid base balance of marsh frog blood. An aquatic species, *P. ridibundus*, is surrounded throughout its entire life cycle by an aquatic environment, which ensures the free exchange of gases and ions across the entire surface of the body, thanks mainly to passive and active transport, which is easily realized in a significant volume. Depending on the level of mineralization, the ionic composition of the aquatic environment and pH, the nature and regulatory potential (which is characterized by the number of correlation interactions) changes. This is reflected in the predominant direction of transmembrane gas-ion flows responsible for acid-base homeostasis. Within certain limits (from ultra-fresh to mineralized waters), these flows are maintained due to passive transport. Apparently, an increase in mineralization to the level of brackish and saline waters, an excess of ions in the environment, as well as an alkaline pH, complicates passive transport and impoverishes the regulatory capabilities of the system, which leads to an increase in the proportion of active transport. Thus, the number and nature of correlations between the concentrations of electrolytes and blood gases well reflect the state of the system for maintaining acid-base homeostasis of animals from a population located in certain environmental conditions.

Keywords: marsh frog, acid-base balance of blood, electrolytes and blood gases, mineralization

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