

### THE MOLECULAR FORMS AND EXPRESSION OF ESTERASES *NEOGOBIUS MELANOSTOMUS* FROM DIFFERENT WATER AREAS OF NORTHERN WEST PART OF BLACK SEA

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Nowadays *Neogobius melanostomus* (Pallas) plays a very important role in aquatic ecosystems, not only in Ukraine but also in Europe and North America. However, its intraspecific structure is poorly understood. This work was carried out to study the diversity of esterases of *Neogobius melanostomus* from different regions of North-Western Black Sea.

Individual *Neogobius melanostomus* were caught in lake Yalpug, in coastal waters of island Zmeinyi and in Odessa bay. Electrophoresis was conducted by the generally accepted methods taken as material for research. The electrophoretic spectrum of tissue esterases of *Neogobius melanostomus* from all these areas of the North-Western Black Sea region is represented by four major fractions of esterases. Esterase of *Neogobius melanostomus* from lake Yalpug is characterized by a distinct subfractional composition, suggesting the presence of S- and F-allozymes for each form of the enzyme. In rare cases, in some individuals there is no element of S-esterase 3, whereas esterases 1 found individuals without S-, or without F-forms. Tissue esterases of *Neogobius melanostomus* from the area near island Zmeinyi have little difference in mobility in the polyacrylamide gel, all identified esterases, except esterase 4, have distinctly subfractional composition. Esterase 2 is observed as the specimens without S-, or without F-shape. This sign indicates heterogeneity of natural groupings. For *Neogobius melanostomus* from Odessa bay identified forms of esterases are distinguished by degree of mobility in the gel and subfractional composition - only esterase 3 could be characterized by the presence of S- and F-allozymes. For fish of this area the highest level of expression observed for esterase 4 and S-allozymes of esterase 3, esterases 1 and 2 was showed the lowest activity. According to all signs studied group represents contentedly homogeneous by genetic structure system.

Data, which we receive, reflect separate biochemical characteristics of the phenotype *Neogobius melanostomus* also it can be used to study not only the intraspecific structure, but for the comparative analysis of individual species *Neogobius*. This research allows to realize the monitoring of dynamic processes, occurring in populations of this species living in different waters of north-western Black Sea.