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### **BIOETHICAL ASPECTS OF HYDROBIONT RESEARCH**

One of the foundations for the stability of aquatic ecosystems is the significant biodiversity of hydrobionts and the existence of multiple biotic relationships between them. Experimental methods are increasingly being adopted among the wide range of methods used to study these organisms. Experimental methods investigations usages are needed to receive results for the following, in particular: the passing in aquatic animals of physiological and biochemical processes, including those associated with the adaptation of organisms to environmental factors; the modeling the relationships between hydrobionts in ecosystems; development of biotesting with hydrobionts etc. This allows the use for scientific purposes of aquatic animals removed from their natural habitat. At the same time, it is particularly important to respect the world's generally accepted bioethical standards (Directive 2010/63/EU of the European Parliament and of the Council, 2010). The latter include, among other things, the search for alternatives to research with vertebrate animals, the reduction of experimental animal numbers, improvement of research protocols to minimize pain and suffering in experimental animals (European convention for the protection of vertebrate animals used for experimental and other scientific purposes, 1999; Russell, Burch, 1992). These provisions also apply to the taxon Cyclostomata representatives and the taxon Cephalopoda representatives, which correspond to a significant development of their cognitive functions (Directive 2010/63/EU of the European Parliament and of the Council, 2010). One of the ways to reduce the impact of a set of factors that cause stress in the body is to use in experiments instead of aquatic animals extracted directly from the natural environment, namely those aquatic animals that are purposefully grown in specialized nurseries. In selecting invertebrates for experimental studies, it is worth drawing attention to the results of studies of the taxon Decapoda representatives indicating their responses to factors, known to cause pain; for which reason the question of certain features in the scientific use of that animals become actual (Passantino A. et al., 2021). According to bioethics principles, research planning and implementation should focus especially on procedures that involve temporary immobilization, anesthesia or euthanasia of hydrobionts. The respective procedures should be planned, resourced and organized in such a way as to prevent stress in experimental animals, to minimize, and better to eliminate, pain, ensure the rapid and effective immobilization of these organisms, which should be preceded by their loss of "state of consciousness" (Close, 1997). In addition, because of the difficulty of monitoring the said state on the basis of data on the cognitive reactions of an animal, it is considered "conscious" to be the state in which the animal is able to perceive and respond adequately to external stimuli, and it is considered "unconsciousness» to be the state in which the animal is loses sensitivity to the corresponding stimuli. In order to provide medicinal anesthesia to aquatic animals, it is recommended to use techniques involving immersion of animals in aquatic environment with appropriate pharmacological agents (VMA Guidelines for the Euthanasia of Animals, 2013). If such anesthesia terminates, the "state of consciousness" can potentially be restored in animals. In view of the latter, respective studies should include procedures to ensure that animals are reactivated and returned to the nursery after the experiment is completed.



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