

BIOLOGICAL CONTAMINATION BY PATHOGENIC VIRUSES OF BLACK SEA ENVIRONMENTAL AS THE RESULT OF MARINE POLLUTION

OLGA A. STEPANOVA

Institute of biology of the Southern Seas by A.O.Kovalevsky of National Academy of Sciences of Ukraine, Avenue Nahimov 2, Sevastopol 99011, Ukraine

The existing literature documents that the sea and marine hydrobionts are the place for accumulation, survival and sometimes for reservation of some pathogenic viruses, mainly enteroviruses entering the sea with sewage waters.

Being pathogenic for men, animals and plants, viruses are able of surviving from some days to some months in water depending on temperature.

Factors promoting to pathogenic virus survival in sea water are their adsorption on suspended particles and their retain in tissues of filtrating molluscs and other hydrobionts.

Many investigations were performed to study the environment pollution by viruses. But knowledge about influence of pathogenic viruses on water and its inhabitants as well as influence on a virus genetic apparatus and virus property of other ecological environment (marine) is not sufficient.

At present the representation on the virus biology specificity (dependence on a main biological host) is critically reviewed. The study of host and parasite heterogeneity is one of prevailing subject in ecological studies.

Pathogenic viruses get in Black Sea with sewage waters and they are revealed in marine water, sediments and in aquatic organisms (mussels *Mytilus galloprovincialis*). During previous years by virological and serological methods entero-, rota-, reo- and adenoviruses were determined in this objects. Level of contamination by pathogenic viruses of sea water is 3,8%, in sediments - 11,8%, and in mussels *Mytilus galloprovincialis* is 24%. Approximate 1/3 of examined molluscs communities were contaminated by viruses. Molluscs with size 25-45 mm were infected higher as compared to great and small-size individuals. Viruses were detected not only in soft tissue, but in mantia media of molluscs. Thus molluscs can be allowed to recommend as a indicator of biological contamination of marine environment.

The mutation appearance in viruses is highly simplified and accelerated. Mutations may occur under influence of different chemical substances, ultraviolet irradiation and some other factors. The environment impact causes a viral natural change ability that may help pathogenic viruses to adapt to a new ecological environment (marine) and to get new hosts (marine hydrobionts). On the base of literature data and our results we proposed the evolution role in ecology of pathogenic viruses in antropogenic pollution.