We matched pairs of primers that allow specific identification of SVCV in clinical material from fish. The comparative analysis of nucleotide sequences in the region encoding the RNA-dependent DNA-polymerase of birnaviruses. Primers for PCR synthesized from two conserved regions flanked by variable segment gene VP2 IPNV strain N1 (568-585 nd and 164-184 nd) through assumptions that our isolates belong to the European serotype.

Was investigated the biological characteristics of isolates of two major viruses of fish belonging to the group of RNA-containing viruses.

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POLIOVIRUS INFECTION PROBLEMS IN UKRAINE

Поскольку на сегодня прекращение циркуляции вирусов полиомиелита в мире остается актуальным вопросом, для контроля над состоянием защищенности населения Украины от полиовирусной инфекции, исследовано уровень антител в сыворотке крови здорового населения, а также проведен сбор данных по проведению вакцинопрофилактики у детей согласно с календарем прививок.

Since cessation of world's poliovirus circulation remain topical issue today, levels of antibodies in the blood serum of healthy population was investigated and was conducted data for vaccineprophylaxis in children. Those studies was developed for Ukrainian population security from poliovirus infection.

Polio – an acute infectious disease characterized by general toxic symptoms and CNS injury by type of peripheral flaccid paresis and paralysis. Poliovirus, the causative agent of poliomyelitis, is a human ***enterovirus*** and member of the family of ***Picornaviridae***. There are three types of viruses: Type I (strain Brunhilde), type II (Lansing strain), type III (strain Leon). They are quite persistent in the environment.

Comprehensive study and scientific reasoning of the epidemiological surveillance system of poliomyelitis was the key to its eradication in most parts of the globe [1, 2].

But the problem of polio at present certainly not solved [3, 4]. This is evidenced by the epidemic, which in recent years there in the world and even in countries where for many years they were not registered [5, 6, 7].

For some infectious diseases, including polio, the main means of prevention is vaccination.

Maintaining the status of Ukraine as a territory free from polio depends primarily on the state of immunization of infection, as measured level of specific population immunity, and the percentage of people exposed to polio infection.

The **aim** of this work was to assess the levels of antibodies to the vaccine strains of polioviruses 1, 2, 3 types in human blood serum, as well as studies of the vaccineprophylaxis in Ukraine.

Materials and methods. Materials: serum of healthy people aged over 25 years living in different regions of Ukraine;data on vaccination in children from different regions of Ukraine. Methods: micromethod of neutralization reaction in cell culture Hep-2 [8].

Results and discussion. According to data obtained from regional SES Ukraine during 2009-2011., the analysis of the success of polio vaccination in children was conducted. Full vaccination complex involves the introduction of inactivated and oral polio vaccine to children less than one year, 18 months, revaccination at 6 and 14 years. Established in 2011, the percentage of children who received the vaccine was the lowest compared with 2009 and 2010. (Fig. 1.). It is shown that the level of polio vaccination of children is not satisfactory, because this figure should not be less than 95% for epidemiological welfare.

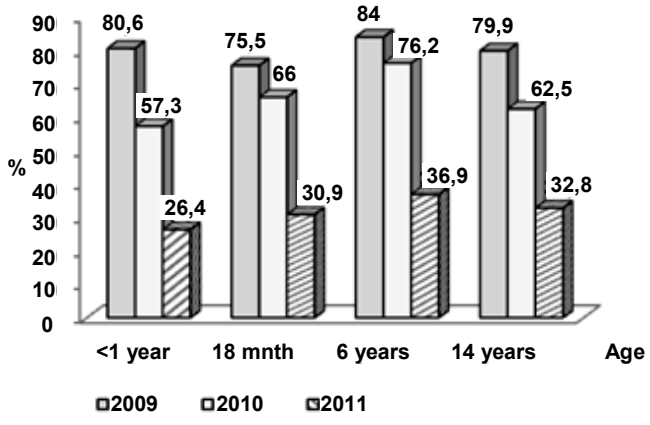

Fig. 1. The status of vaccination in children in 2009-2011

It was shown that index of antibodies to polioviruses 1, 2, and 3 types were at a sufficient level in children under 15 years. For example, 60.4% of children had sufficient antibody levels (1:16-1:64) for type 1 poliovirus (Fig. 2.). In type 2 polioviruses this figure was 61.4%, for type 3 polioviruses – 57.5%. However, high antibody titers (1:128-1:256 and above) to type 1 polioviruses was observed only in 29.9% of individuals, to type 2 polio virus – 28%, to 3 types – only in 14.5% of children.

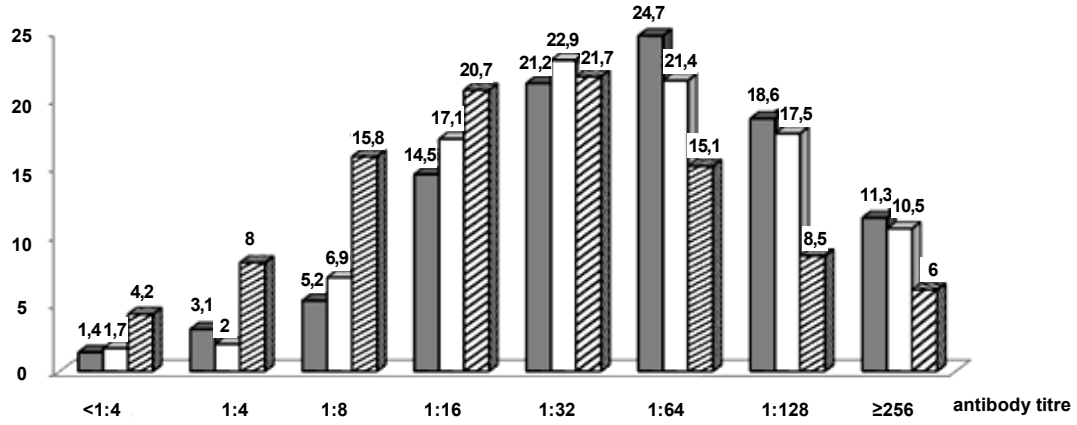

Fig. 2.The antibody levels to three types of polioviruses in children in 2011

For the study of immunity to polioviruses of all age population groups it was investigated serum of the adult population aged 25-65 years and older (Fig. 3.). Studies were conducted on cultured cells HEp-2 with vaccine strains of polio viruses 1, 2, 3 types and sera of subjects.

It is shown that the lowest levels of antibodies in the adult population were observed to poliovirus type 3. Thus, 67.2% of people were totally unprotected, 31.4% of subjects had low antibody titers (1:4-1:8), and only 1.4% – satisfactory titers. Among the samples of blood serum were not detected such, had high levels of antibody titers to type 3 poliovirus.

A somewhat different pattern was observed in the study of antibodies to poliovirus type 1. It is shown that 45.7% of the population were not protected (titer <1:4), were poorly protected 40% of those 34.4% had satisfactory antibody levels (1:16-1:64), the rest 2.8% – high levels of antibodies to polioviruses type 1.

For type 2 polioviruses 10% of the adult population of Ukraine appeared unprotected, the vast majority (47.2%) patients had low levels of antibodies to type 2 virus, the mean values of antibody titers were observed in 11.4% of people, and the smallest percentage (only 1.4 %) people had high levels of antibodies.

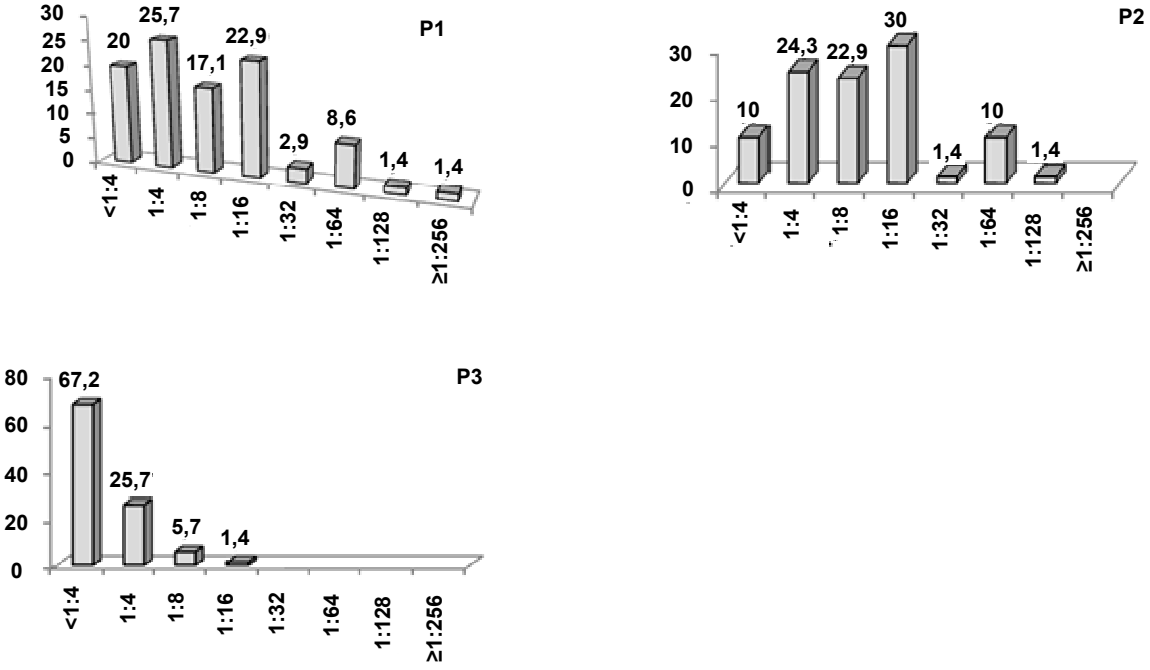

Fig. 3. Status of immunity to polioviruses 1(P1), 2(P2), 3(P3) types in the adult population in 2011

Thus, we can conclude unsatisfactory conduct vaccination among children and the general low level of antibodies against polio viruses of three types in the population of Ukraine. The first phenomenon can be explained by the failure parental cases of vaccination of their children, that had increasingly distributed nature among the population. Low levels of antibodies to polioviruses in the population of Ukraine, possibly due to the lack of circulation of wild strains of polio virus in the country. Subject to obtaining the full induced complex formed lasting immunity provided by memory cells. But if immune system does not meet with the agent for a long time, antibody levels accordingly reduced.

Conclutions. Thus, it was found that the level of vaccination to children under one year, 18 months., 6 years and 14 years, in accordance with the vaccination calendar in 2011 is much lower than in 2009-2010. However, levels of protective antibodies in children under 15 years in most cases had average levels (titre value within 1:16-1:64). Analysis of immunity to polio virus in the adult population in 2011. showed that persons aged 25-64 years and older

had low levels of antibodies to all three types of polioviruses, only a small percentage (1.4% -2.8%) of subjects had high titers of antibodies, antibodies to polio type were absolutely absent.

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DISTRIBUTION OF CACTUS VIRUS X IN SOME BOTANICAL GARDENS OF UKRAINE

Проведено обследование растений семейства Cactaceae в коллекциях Никитского ботанического сада и ботанического сада Харьковского национального университета имени Н.В. Каразина. Описаны симптомы инфицированных растений. Свойства возбудителей исследовали с помощью растений-индикаторов, непрямого ИФА и трансмиссионной электронной микроскопии. Опираясь на серологические, биологические и морфологические характеристики изолированного вируса, мы можем предположить, что данный патоген является родственным X вирусу кактуса.

Screening of Cactaceae on virus diseases in the collections of Nikitsky Botanical Garden and Botanical garden of Karasin's Kharkiv National University has been conducted. Different symptoms were detected on virus-infected plants. To define properties of the indicated pathogen methods of host assay, indirect ELISA and transmission electron microscopy were employed. Basing on serological, biological and morphological properties, we suggest that isolated virus is related to Cactus virus X.

Introduction.The culture of cactuses in modern floriculture occupies one of leading places. In accordance with literary data about 10 viruses are able to affectthe members of *Cactaceae* family: *Cactus virus X, Schlumbergera virus X, Opuntia virus X, Zygocactus montana virus X, Saguaro cactus virus, Sammons' Opuntia virus, Cactus virus 2 (CV2), Cactus mild mottle virus, Impatiens necrotic spot virus* and *Tomato spot wilt virus* [3,4]. Among them *Cactus virus X* is one of most dangerous. *Cactus virus X* is transmitted by mechanical inoculation, grafting and by contact between plants. [1,5,6]

Materials and methods. We have been collected plants with virus-like symptoms: *Mamillaria microhelia, Ausrocylindropuntia tunicata, Monvillea sp., Sulcorebutia sp., Bolivicereus samupatanus, Opuntia sp., Ferocactus sp., Thelocactus chrenbergii, Trichocereus bridgesii, Mamillaria magnimamma, Agave furcrea, Opuntia sp., Cereus sp., Astrophytum capricorne, Cereus sp., Astrophytum myriostigma, Astrophytum myriostigma v. nudum* from greenhouse collection of Nikitsky Botanical Garden and *Ritterocereus pruinosus* from the collection of Karazin' Botanic Garden of Kharkiv National University. Infectivity of disorders was confirmed proved using indicators plants typical for majority cactus viruses such as *Chenopodium murale, Datura stramonium, Gomphrena globosa, Nicotiana rustica*. Virus identification was carried out using indirect ELISA [2]. Same samples of plants of *Cactaceae* family were analyzed in electron microscopy at 30,000 magnification. [7]. Electrom microscopic examination we conducted with an Jem electron microscope. Crude sap preparations were negatively stained with 2% uranyl acetate.

Results and discussion. Cactus plants demonstrated different symptoms of virus infection. On some plants (*Mamillaria microhelia, Ferocactus sp., Thelocactus chrenbergii, Trichocereus bridgesii, Mamillaria magnimamma, Agave furcrea, Opuntia sp., Cereus sp., Astrophytum capricorne, Cereus sp., Astrophytum myriostigma* from greenhouse collection of Nikitsky Botanical Garden and *Ritterocereus pruinosus* from the collection of Karazin' Botanic Garden of Kharkiv National University) we observed mosaic symptoms, on other plants (*Ausrocylindropuntia tunicata, Monvillea sp., Sulcorebutia sp., Bolivicereus samupatanus, Opuntia sp., Astrophytum myriostigma v. nudum* from greenhouse collection of Nikitsky Botanical Garden) – symptoms of necrosis (Fig.1,2).

Fig.1. Necrosis on the stem *Astrophytum myriostigma v. nudum*

Fig.2. Mosaic on the stem *Ferocactus sp.*