

The UKRAINIAN I. I. Mechnikov ANTI-PLAGUE RESEARCH INSTITUTE
Odessa, UKRAINE (MINISTRY OF HEALTH)

(Organization's) Technical Area Keywords: Emergent Infections, State Territory Sanitary Protection, Biosafety



National and International Programs in collaboration with scientific and practical organizations, carrying out scientific research in STCU, CRDF, INTAS, etc. projects.

Institute accumulates the unique experience while modern (sentinel surveillance) monitoring epidemics of HIV/AIDS, Tuberculosis, STDs, Drug Abuse in different target groups in process research under supervision of the National and International Programs.

Institutes' laboratories fulfill monitoring of related territories and are ready for quick indication and identification of the QOEDI and OAI objects of biological pathogenic agents (BPA) of the III-IV level (CDC classification), including their biological properties, genetics, immunology, ecology and epidemiology study, estimation of epidemiological and epizootological potential of the BPA foci, methods of preventive maintenance and treatment

Method for antibiotics anti-bacterial activity increasing includes complex use of the antibiotics with proteolysis inhibitors and allows: to increase activity against Cholera, Tularemia, nosocomial infections agents, decrease effective doses of the antibiotics

Transdermal delivery system containing remantadine was developed. The main system's advantages are: prolongation of the drug action, absence of the drug concentration, reducing of the adverse reactions. On the base of E-aminocaproic acid (EACA) antiviral action investigations it was recommended by the Department of veterinary medicine of Ukraine for poultry and poultry farms treatment with aim to prevent Avian influenza Panzootia (TK#152, Protocol #10 26.01.2006).

Scientific Cooperation and Technology Transfer

The Institute collaborates with many related facilities in Ukraine and abroad. In Ukraine we deal with Central SES, Gromashevsky Institute of Epidemiology and Infectious Diseases (Kiev), Lviv Research Institute of Epidemiology and Hygiene, Odessa National University, Boghatsky Physical-chemistry Institute (Odessa), regional SESes, biosphere nature reserves. Abroad we traditionally collaborate with Russian related facilities. In addition, we collaborate very tightly with Canadian Ministry of Foreign Affairs, Canadian Center for human and Animal Health (Winnipeg), Robert Koh Institute (Berlin), Umea University (Sweden).

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General Information

The Ukrainian I. I. Mechnikov Anti-Plague Research Institute (UAPRI) was founded in 1886 in Odessa by I. I. Mechnikov, the Nobel prize winner, as a bacteriological station, which has been the second in the world after Pasteur station in Paris. Since 1999 our Institute has been working in present status. The work is based on the experience of FSU anti-plague system and achievements of modern science. The Institute is responsible for the quarantine and other especially dangerous infections (QOEDI) surveillance, study, epidemiological complications' analyses, identification and study of isolated agents, state sanitary document projects' preparation, new preparations' development.

Institute's Focus

- Improvement of the system of sanitary protection of the territory of the Ukraine from QOEDI penetration and distribution
- Investigation of the formation and development of the QOEDI natural foci for their localization and control over new foci formation
- Studying the biological properties of the QOEDI in order to estimate their epidemiological potential
- Identification/development of new chemical preparations for QOEDI effective diagnoses, prevention and treatment
- Reduction of the agents resistance to antibiotics by joint application of antibiotics and proteolysis inhibitors
- Development of methods for epidemics' forecasting and principles of organization of preventive and counter epidemic measures
- Development of new/or improved methods for diagnosing the QOEDI
- Development of immune-biological preparations and vaccines against emerging diseases
- Evaluation of the new methods and approaches of the original effective antiviral and antimicrobial preparations with the use of the contemporary computer technologies (QUSAR)
- Biosafety training for the staff of Ukrainian epidemiological sanitary stations departments of especially dangerous infections
- Museum collection of especially dangerous diseases agents is a branch of State Museum of Gromashevsky Institute and contains more then 850 strains of bacterial and viral agents

Valuable technology offerings

Studies of the biological protection of the territory and population in present time have special importance and prospective value and are fulfilled by the staff, which has practical experience of "in foci" investigations, including



I. I. MECHNIKOV UKRAINIAN ANTI-PLAGUE RESEARCH INSTITUTE



The Institute was established in Odessa in 1999. Its creation was a significant step in strengthening the infrastructure of public health services and control over infectious diseases in Ukraine and Eastern Europe. The Institute is the leading Ukrainian research organization on quarantine infections and other especially dangerous infections (EDI). Its laboratories have administrative and technological facilities powerful enough to meet the requirements of the “safe-mode operations” with EDI.

The expertise of the staff includes epidemiology, microbiology, virology, genetics and biochemistry. Currently the Institute has 195 employees and the staff possesses extensive practical work experience in the natural foci of infections and outbreaks. The scientists conduct scientific research, perform medical laboratory testing and data analyses to assist in the diagnosis, treatment and prevention of diseases, including HIV/AIDS, bacterial infections (tuberculosis, nosocomial infections, sexually transmitted diseases) and PRION infections. The facilities include a specialised clinic and eleven well-equipped laboratories. In addition to research, staff members provide training in the areas of epidemiology, epizootology, ecology, diagnosis, and prevention of especially dangerous infections. Its main areas of scientific research are the following:

- Elucidating the principles of the formation and development of the EDI natural foci with the purpose of their localization and control over new foci formation.
- Studying the biological properties of the EDI in order to estimate their epidemic potential.



The Institute's training facility

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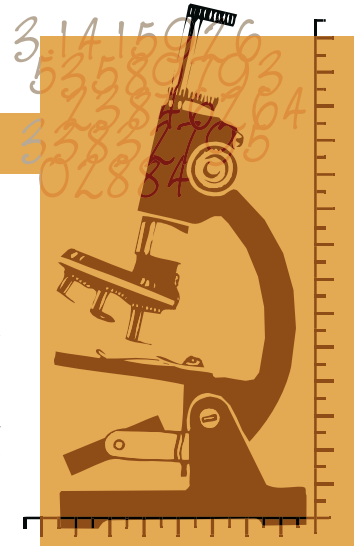
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- Identification / development of new chemical preparations to effectively deal with the EDI.
- Reduction of the EDI resistance to antibiotics by joint application of proteolysis inhibitors and antibiotics.
- Development of methods for forecasting epidemics and principles of organization of preventive and counter epidemic measures.
- Development of new and/or improved methods for diagnosing the EDI.
- Development of immuno-biological preparations and vaccines against emerging diseases.
- Evaluation of the new methods and approaches for the creation of the original effective antiviral and antimicrobial preparations with the use of the contemporary computer technologies.
- Improvement of the system of sanitary protection of the territory of the Ukraine from penetration and distribution of EDI.

The Institute has strong collaborative research connections with organizations from around the world, and it receives financial support from a variety of international organizations including STCU, SOROS Foundation, Civilian Research and Development Foundation, NEDA and the University of London. The I.I. Mechnikov Anti-plague Institute is included in the list of possible international Cooperative Centers in creating Global Network for Monitoring and Control over biological pathogenic agents.



Electron microscopy



Working in the biosecurity unit



Luminescent microscopy

Ukrainian Anti-Plague Research Institute (UAPRI)



The Institute is the leading Ukrainian research and training organization on quarantine infections and other especially dangerous infections (EDI).

The Institute, established in 1999, was created to strengthen the infrastructure of public health services and to control infectious diseases in Ukraine and Eastern Europe. Its laboratories have administrative and technological facilities for “safe-mode operations” with EDI. The facilities include a specialized clinic and eleven well-equipped laboratories.

The expertise of the staff includes epidemiology, microbiology, virology, genetics and biochemistry. Currently,

the Institute has 195 employees and the staff possesses extensive practical work experience in the natural foci of infections and outbreaks. The Institute specializes in the diagnosis, treatment and prevention of diseases, such as HIV/AIDS, bacterial infections (tuberculosis, nosocomial infections, sexually transmitted diseases) and prion infections. The staff also provides training in epidemiology, epizootology, ecology, diagnosis, and the prevention of EDI.

Areas of Research and Development:

- Principles of the formation and development of EDI natural foci for applications in localization and con-

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trol over new foci formation;

- Biological properties of EDI, in order to estimate their epidemic potential;
- New chemical preparations against EDI;
- Reduction of EDI resistance to antibiotics by joint application of proteolysis inhibitors and antibiotics;
- Methodology for forecasting epidemics and principles of organization of preventive and counter epidemic measures;
- Improved diagnostics for EDI;
- Immuno-biological preparations and vaccines against emerging diseases;
- Evaluation of new antiviral and antimicrobial preparations by computer-assisted technologies; and
- Improvement of the system of sani-

tary protection of the territory of Ukraine from penetration and distribution of EDI.

The Institute has strong collaborative research connections with organizations from around the world, and it receives financial support from a variety of international organizations, including the STCU, SOROS Foundation, Civilian Research and Development Foundation, NEDA and the University of London. The I. I. Mechnikov Anti-plague Institute is included in the list of possible International Cooperative Centers in creating the Global Network for Monitoring and Control over biological pathogenic agents.



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