

## IMMUNOBIOLOGICAL PREPARATIONS AND THEIR QUALITY CONTROL

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### Abstract

Immunobiological preparations are biological agents that affect the immune system of humans and animals, forming, strengthening or suppressing the immune response. Currently, they are widely used in the treatment and prevention of diseases. Their production and quality control play an important role in human health.

### Keywords

Interferon, interleukin, virus, hepatitis, anatoxin.

## ИММУНОБИОЛОГИЧЕСКИЕ ПРЕПАРАТЫ И КОНТРОЛЬ ИХ КАЧЕСТВА

### Аннотация

Иммунобиологические препараты — биологические средства, воздействующие на иммунную систему человека и животных, формируя, усиливая или подавляя иммунный ответ. В настоящее время они широко применяются при лечении и профилактике заболеваний. Их производство и контроль качества играют важную роль в здоровье человека.

### Ключевые слова

Интерферон, интерлейкин, вирус, гепатит, анатоксин.

Immunobiological drugs are divided into the following groups:

Vaccines are administered to the body to create immunity against pathogens. Today, prevention is considered one of the most effective measures to prevent the occurrence and spread of infectious diseases. Specific prevention (vaccination) is the provision of resistance to one or another infection by the population through preventive vaccination. Over the past 40 years, preventive vaccination has become

important in combating infectious diseases such as measles, diphtheria, whooping cough, poliomyelitis, epidemic mumps, hepatitis B, rubella, tuberculosis, influenza, epidemic mumps and tetanus.

Thanks to the use of specific preventive methods, the main infectious diseases have been completely reduced, even eliminated from the face of the earth. All this was achieved thanks to the use of vaccines. Smallpox has disappeared without a trace, and diseases such as poliomyelitis, measles, whooping cough, diphtheria, and mumps have been reduced to a minimum. Indeed, vaccines, immune serums and immunoglobulins are important in preventing, that is, eliminating, any infectious diseases. The most important of these is vaccines. They are divided into the following groups.

Live attenuated vaccines (for example, measles, tetanus, BCG)

Inactivated (inactivated) vaccines (influenza, hepatitis A)

Toxins (anatoxins) - to neutralize bacterial toxins (diphtheria, tetanus)

Recombinant and synthetic vaccines (COVID-19, papilloma virus)

Sera (antisera, immunoglobulins) are ready-made antibodies that are used to quickly protect the body. Immune serums are serums obtained from the blood of humans and animals immunized with an antigen and containing antibodies specific to this antigen. Immune serum is usually obtained from the blood of artificially immunized animals (rabbits, horses, guinea pigs) (see Immunization) or from the blood of people who have had some infectious diseases. The protective and therapeutic properties of I. z. are based on the presence of special compounds in them - antibodies that have the ability to detect disease-causing factors (have a special sensitivity to them) and neutralize them (see Immunity). In response to the entry of any agent containing a foreign protein, antibodies are produced in the human or animal body and are stored in its blood serum for a long time, sometimes for life. This is the reason why people who have had some infectious diseases do not get sick with this disease again for a lifetime. There are I.z. used for diagnostic (serodiagnosis) and therapeutic and prophylactic purposes (seroprophylaxis, serotherapy). I. z. When administered, passive immunity is formed, which persists for a certain period (2-4 weeks). With this in mind, people who have been close to a patient with an infectious disease (for example, measles) are vaccinated with I. z. in order to protect them from the disease. I. z. is used in the treatment of diphtheria, tetanus, botulism, etc., as well as in cases of snake, bee, and some insect bites, etc. Depending on the nature of the antibody in the serum, I. z. is distinguished into antitoxic, antibacterial, antiviral, and anti-snake venom. In subsequent years, the discovery of antileukocyte sera and their use in medical practice made it possible to determine the donor and recipient in organ and tissue transplantation, as well as to

study immunogenetics. After administration of I. z., shock and serum sickness may sometimes occur. To prevent this, a small amount of immune serum is administered before the injection (15-30 minutes, sometimes 1-2 days before).

Interferons and interleukins are antiviral and immune-activating substances and are grouped as follows.

Interferons - for the treatment of viral infections (influenza, hepatitis)

Interleukins - used in diseases of the immune system

Immunomodulators

Drugs that increase or decrease the activity of the immune system.

Immunostimulants - are interferon inducers, bacterial lysates.

Immunosuppressants - used in organ transplantation and autoimmune diseases.

The laboratory for quality control of immunobiological preparations is equipped with immunoenzyme analyzers, automatic and semi-automatic biochemical analyzers, special thermostats, centrifuges, washers and vortex devices, dispensers of various calibers, pH meters, electronic scales and other equipment to carry out quality control tests of diagnostic tools submitted for registration in the Republic of Uzbekistan. Also, this laboratory carries out control of markers of viral infections - hepatitis B, hepatitis C, AIDS pathogens - in the composition of blood preparations. Testing of all series of blood preparations submitted for registration and certification is carried out using immunoenzyme and immunoblot methods. This is due to the fact that in our country blood.

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