THERAPEUTIC AND PROPHYLACTIC PREPARATIONS BASED ON RECOMBINANT PROTEINS

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Animal's infectious and non-infectious diseases is a global problem, which costs billions of dollars annually.

Infectious diseases can be divided into viral, bacterial and mixed (bacterial and viral). The latter group is currently most prevalent and usually, during the first stage of the disease, animal is exposed to the virus, weakening the organism and «opening the gates» for bacterial pathogens, which greatly complicate the picture of the disease.

Humans have antibiotics to fight bacterial infections and they until recently were widely and successfully used. However, a problem of mass resistance and insensitivity of microorganisms to antibiotics arises, i.e. widespread and uncontrolled use of antimicrobial drugs has led to the development of resistant pathogenic strains, which are not susceptible to standard methods of therapy.

In case of viral and mixed infections, when the main or initial causative agent of the disease is a virus, it is still a deficit of effective medications to cure such conditions, and existing tools are directed primarily against human diseases and not effective in animals.

At the heart of the confrontation between the organism and the infectious agent is the immune system. However, if this system is depressed or in non-functional state, the organism almost has no chances to recover.

Many researches focused on the development of preparations that act directly on the infectious agent (antibiotics) or stimulate the immune system, which itself deals with the causative agent. It should be noted that antibiotics fight with bacteria and simultaneously depress the immune system. Chemical immunomodulators have a number of side effects.

In our laboratory we are developing preparations based on protective proteins of animals (cytokines), which are components of the immune system. Moreover, these components are strictly specific, i.e. bovine proteins used only for cows, porcine – for pigs, canine – for dogs, etc.

After injection these component(s) triggers the production of a range of protective components of the immune system, allowing the organism to cope with a variety of pathogens within a short period.

Our researches also show that the joint use of antibiotics and cytokines allows for elimination of the negative effects of antibiotics on animal's organism and reduction of the effective dose of the antibiotic.

We have also developed an innovative patented injectable dosage form, which prolongs the therapeutic and prophylactic effects of preparations.