

GENETIC ENGINEERING METHODS OF ONCOLOGICAL DISEASES CURE

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Introduction. Oncological diseases is one of the biggest problem of modern medicine. This disease develops because of influence of strong ultra-violet and radioactive radiation, violations at the genetic level, complications of infectious diseases, effect of some chemical reagents, etc. Statistically in the world about 8200000 people annually die from this disease. It is about 13% of all death in the world. Annually in Ukraine about 90000 people die and 35% of them are people of working-age which die from cancer.

Aim. To study modern genetically engineered methods of fight against oncological diseases.

Results and discussion. Biotechnological medicines and methods against oncological diseases creation is very advanced for medicine. One of these methods is the IF therapy. Its biomechanisms of action are connected with simultaneous antiviral effect (activation of cellular genes), and immunomodulatory effect (ability to strengthen the HLA antigens expression on cellular membranes and to increase the cytotoxic T- and NK-cells activity). IF therapy is useful against skin melanoma, prostate cancer, bladder, stomach, glial tumors. Such medicines as Realdiron, Viferon-Feron, Bioferon, Introferobion, Alviron, Alfarekin, Pegferon, Eberon Alpha R containing recombinant interferon are presented at the market of Ukraine. One more perspective method of cancer therapy is gene therapy. By means of gene therapy it is possible to exclude the tumor blood supply by introduction to blood cells the specific protein synthesis controlling therapeutic gene; by the p-53 gene modification in cells (the tumor suppression gene); the "self-liquidation genes" insertion to the patient cancer cells; the *ras* oncogene suppression (the known carcinogens mutation gene). Unfortunately, there are no the gene therapy medicines which were created by genetic engineering method in Ukraine. But in the world there are such recombinant oncolytic viruses containing drugs as Gendicine, OncoVex and Oncorine (produced at China).

Conclusion. Gene therapy and IF therapy are the examples how it is possible to force human immunity struggle against tumors by the biotechnological scientific achievements. Biotechnological and genetic engineering methods have broad opportunities for oncological diseases cure.