

## Genetic engineering-core of modern medicine

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**Introduction.** Especially great opportunities genetic engineering opens the medical industry since the application of genetic engineering could lead to radical changes of Medicine. Many diseases for which currently there is no adequate methods of diagnosis and treatment (cancer, cardiovascular, viral and parasitic infections, nervous and mental disorders), through genetic engineering and biotechnology will be available to diagnosis and treatment.

Genetically engineered organisms used in applied medicine since 1982, when there were drugs, insulin obtained using genetically modified bacteria.

Work is underway to create genetically engineered plants that produce components of vaccines and drugs against dangerous infections. Successfully tested and approved for use against thrombosis drugs from protein from the milk of transgenic goats. Gene therapy is rapidly developing a new branch of medicine. It is based on an object in genetically engineered gene acts human somatic cells. Currently, gene therapy - one of the main treatments for certain diseases, as early as 1999, one in four children suffering from SCID (severe combined immune deficiency), treated using gene therapy. Gene therapy, except for use in treatment can also be used to slow the aging process.

Currently, according to the WHO in the world there are about 110 million people with diabetes. One of the achievements of genetic engineering in medicine – is the transfer of genes encoding insulin synthesis in human cells in bacteria. Since then, it turned out that the cause of diabetes is the lack of the hormone insulin, all patients given insulin obtained from the pancreas of animals. Insulin - a protein, and therefore has been much debate about whether genes can embed this protein in cell bacteria and can grow these bacteria on an industrial scale as much cheaper and more convenient source of the hormone. Even if successful gene transfer, there is one hidden complexity associated with possible differences in the mechanisms of regulation of protein synthesis in eukaryotes and prokaryotes. Currently successfully transfer genes of human insulin and has begun industrial production of this hormone.

Also, genetic engineering achievement is genetically modified herpes virus against cancer. British doctors conducted a successful clinical trials of genetically modified herpes virus that is used in the treatment of certain cancers. Neck and head cancer, including cancer of the mouth, tongue and throat, is found in approximately 8 thousand Britons each year.

**Conclusions.** As a result it may be concluded, genetic engineering is a science which is based on the future. Of course, all new fraught with some danger, but not to risk it, so do not move forward. Genetic engineering can be compared to fire, it can raise humanity to a higher level of development and perfect, and maybe destroyed, if not properly dispose of it.

### References:

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