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THE CURRENT STATE OF GENETIC RESEARCH IN THE REPUBLIC OF BELARUS

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This work contains information about trends of development and contemporary situation in the field of genetic researches in Belarus and their practical use in the national economy.

A special attention was paid to the genetic diagnostics in medicine, because according to the last research, future medicine will be personalized, predictive, preventive and participative, based on DNA-diagnostics, which allows detection of molecular-genetic risk factors of multifactorial diseases. The technologies were elaborated for identification of genetic predisposition to cardiovascular diseases, diabetes, metabolic syndrome, osteoporosis, and pregnancy miscarriage. Timely detection of a high risk of the above pathologies allows prevention of their development.

The main DNA-research trends in the Republic of Belarus are:

1 Structural and functional organization of genomes in plants, animals, microorganisms and human;

2 Genetic and cell engineering;

3 Development of DNA-technologies for agriculture, health protection, sport and environmental control;

4 Biosafety problems;

5 Forensic DNA analysis.

The Institute of Genetics and Cytology of the National Academy of Sciences of Belarus established The Republican DNA Bank of Human, Animals, Plants and Microorganisms for long-term storage and multiple use of unique DNA samples for the development and application of genomic biotechnologies in health, sport, industry, agriculture and in the field of environmental protection. DNA samples will be used for the mutually beneficial exchange in the framework of international treaties governing the exchange of genetic resources between countries around the world.

Modernization of the society is inherently associated with the active development and implementation of new applications in the field of biotechnology and genomic researches that in this process play an important role in contributing to the formation of the economy of our country.