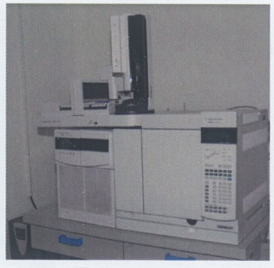
quantitative metabolite analysis and develops technologies for the comprehensive analysis of metabolites with GC/QQQ Agilent technologies 7000A. JGC offers advice regarding the design of the metabolomic experiments, the extraction protocols, extraction of the samples (depends on the type of samples), qualitative and quantitative sample analyses, presentation of the results obtained, and utilization of the electronic chromatographic library.



Services – areas of application:

- DNA fingerprinting for cultivar and bred identification and purity
- Diagnosis and assessment of the genetic and phyto-sanitary status of the plant and seed materials for seed producers and plant nurseries.
- Control analysis of various plant and animal food products, their quality and safety status based on DNA and metabolomic level.
- Detection of genetically modified organisms
- Protection of the intellectual property of various bioproducts DNA and metabolic level

Jgc offers ADDITIONALLY:

- Consultancy;
- Education and training;
- Highly automated greenhouses, plant growth chambers and professional advice to the needs of agribusiness related to the application of modern technologies for sustainable growing of agricultural crops in order to obtain high quality products.

A more detailed description concerning the services, the sample preparation, the application procedure and the prices *(according to the policy for domestic research support)* can be found on the web site: **www.jgc-bg.org**

Contacts:

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JOINT GENOMIC CENTER

Joint Genomic Center Ltd was founded in 2007 as a joint venture between Sofia University "St. Kl. Ohridski" and the Agricultural Academy of Science. Since February 2010 the JGC belongs solely to Sofia University. Currently JGC is managed by Prof Atanas Atanassov, who is a full member of the Bulgarian Academy of Sciences and Prof. Maria Shishiniova.

The basic goal of the Joint Genomic Center is to increase the competitiveness of the Bulgarian bio-economy. By its establishment as a key strategic centre, it will provide the Bulgarian university and academic researchers and SMEs with an access to modern equipment, "know-how", utilization of the multidisciplinary approach, up-to-date experimental methods for the development of high value added products. The complementary and synergic principles of the EU will be followed and thus avoiding duplication and fragmentation on a national and international level.

The Center aims to play a catalyzing role in the establishment of networking and synergism between education, science and business; by identifying and filling in the gaps of the current knowledge concerning the traditional products and bio-resources. Building a knowledge based economy requires direct knowledge based implementation of the science achievements into the economy sector.

JGC works for the efficient cooperation with the national institutions, regional and international science and business, participation in the EC programs and networks, technological transfer for proper implementation of the IPR principles.

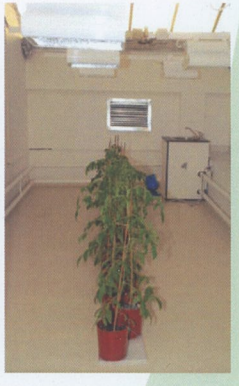
The JGC model for interaction with state institutions, SMEs, NGOs and the market, is based on successful European models which have experience in securing funds and meeting all EU compliance requirements.

Key areas of interest of the Joint Genomic Center

JGC has interests in the following fields that are of importanr economic meaning for the country in the short-term and long-term:

Using up-to-date knowledge, JGC investigates crops grown in Bulgaria, in the region and other countries, by applying a genomic approach (DNA marker assisted selection, gene expression, sequencing etc.) for the identification of genotypes which could contribute to studying and development of such cultivars resistant to abiotic and biotic stress . This will allow our country to benefit as soon as possible from the practical achievements in those areas.

In the field of food, medicines, cosmetics, Bulgaria is characterized by rich biodiversity with a variety of plant and animal products with specific and unique taste, aroma, composition and action. Priority will be given to the identification, characterization, studying of the properties, food ingredients and health properties in traditional Bulgarian products, which play a major role in maintaining human health by qualitative and quantitative metabolomic analyses JGC aims to to select a range of products which have strong antioxidant, antiviral, antimicrobial, anti-flamatory, ant-tumoral qualities.



In the field of biodiversity conservation - the selection of economically and environmentally unique for the country organisms (microorganisms, plants, animals); establishing of a gene bank for preservation of DNA, tissues and organs of the selected organisms. Establishment of a gene bank for local species close to extinction, i.e. fruit and vegetables, herbs, medical plants, crops, aborigine breeds of animals is one of the first priorities and a necessity for the effective operation of the JGC.

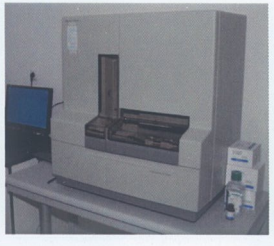
JGC is a new innovation entity which aims to show how the scientific knowledge and experiences can meet the requirements of the industry. JGC will serve as a model for public / private partnership which could be a good groundbase for the development of the bioeconomy of the country.

Services in the field of GENOMICS

1. DNA sequencing

JGC has a four capillary DNA sequencer ABI 3130, which can perform a precise DNA analysis of fragments of up to 1000 bp. The Center offers analysis of fragments at different level of purification and format.

According to the level of purification and the need of further operations and reagents services for DNA sequencing are offered: DNA analysis; DNA purification and analysis, DNA sequencing, purification of plasmid DNA and DNA sequencing; purification of DNA/PCR products and DNA sequencing; analysis of the results obtained.



2. DNA fragment analysis

JGC offers DNA fragment analysis with a broad range of application of molecular markers during genotyping, evaluation of the biodiversity, mapping etc.

3. Genetic analysis through real time sequencing of PCR products (pyrosequencing)

PyroMark Q96 ID is an apparatus for genetic analysis with a lot of applications which gives information for the PCR products via direct analysis. PyroMark Q96 ID uses the standard 96-well format so it can analyze up to 96 samples in one run. Some of the applications are: SNP and mutation analysis; quantitative analysis for CpG metilation; sequencing of short DNA fragments – microorganism identification.

4. GMO analysis

JGC offers qualitative and quantitative GMO analysis.

Services in the field of METABOLOMICS

SGC offers high-throughput qualitative and