

«EU–RUSSIA PARTNERING EVENT IN BIOTECHNOLOGY»

Moscow, Russia, 2005

**PREPARED PROPOSALS FROM THE RUSSIAN FEDERATION, NIS AND EUROPEAN UNION COUNTRIES
 FOR THEIR PRESENTATION AT THE BROKERAGE EVENT**

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| Head of the Project: | Abugaliyeva Aigul, Dr. |
| Organization: | Research-and-Production Centre of Agriculture and Plant Growing |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Abugaliyeva Aigul T: +7 32771 53 150 F: +7 3272 98.36 08 aigul@nip.kz |
| Collaboration: | Information exchange, research development, joint development of technology to apply in the field of processing and producing the agricultural products. First of all we are looking for the scientific partner as well as for the partner to continue common activity after project duration in order to develop end product and commercialize the results. |
| FP6 Instrument: | Any |

Short Description of the Project:

Development and perfection of forecasting methods and evaluation of quality of raw materials and processing of agricultural production; definition of complex of issues on harmonization of Kazakhstan standards to estimate quality and safety of food production with international standards and technical regulations.

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| Head of the Project: | Bajinyan Sergey, Prof. |
| Organization: | Sector of Radiation Medicine and Burns, Center of Traumatology, Orthopedics, Burns Radiology Ministry of Health, Republic of Armenia |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Bajinyan Sergey T: (+3741) 35 21 42, F: (+3741) 39 45 82 bsergei@web.am |
| Collaboration: | We can offer research development, information exchange. We looking for the partners from research radiobiological institutes, which are interested in performance of the cooperative studies. Outcomes of our studies might be promising from the point of view of both science and technology, considering great promotional potential of the plant/herbal dietary products for human use and medical application. We would like to find scientific and industrial companies, who have possibility to fund studies, even partially. |
| FP6 Instrument: | Any |

Short Description of the Project:

It is suggested to obtain low-toxic natural means with radioprotective and radiorecovery activity from hydroponic cultivated plants. Cultivation of medicinal herbs in soilless conditions gives an opportunity to elevate the content of biological highly active substances in different plant parts by the regulation of the root nutritive medium composition. Technology will be developed for obtaining plant composites with radioprotective and antioxidant properties using biologically active natural compounds obtained from raw plant material of various specimens of Caucasian flora.

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| Head of the Project: | Dordas Christos, Dr. |
| Organization: | Aristotle University of Thessaloniki, School of Agriculture, Laboratory of Agronomy |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Dordas Christos T: +302310998602, F: +302310998634 chdordas@agro.auth.gr |
| Collaboration: | We can offer technical support, assist and collaborate in research and development and also exchange information. The potential partner(s) can be from academic institutions, private companies, manufacturers. We are looking partners to develop and exploit technologies for improving the nutritional value of foods. |
| FP6 Instrument: | Any |

Short Description of the Project:

Our major objective is to improve the nutritional quality by increasing the micronutrient (iron, zinc, iodine, selenium, provitamin A, carotenoids) density of staple plant foods (i.e., rice, wheat, maize and beans) and safety of food crops for humans and animals using sustainable foodbased system approaches, classical genetics and also molecular biology tools. Developing and developed countries, companies working with food and feed, fertilizer companies, international organizations.

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| Head of the Project: | Dzantiev Boris, Prof. |
| Organization: | Institute of Biochemistry Russian Ac. Sci. |
| Title of Project: | Immunoanalytical techniques for express monitoring of hazardous pollutants in feeds |
| FP6-TP5 Specific Area: | T 5.4.7.1. Feed safety control |
| Contact Persons and Contacts: | Prof. Dzantiev Boris T : 7 (095) 954-5283 F : 7 (095) 954-2732 dzantiev@inbi.ras.ru www.inbi.ras.ru |
| Collaboration: | Institute of Chemical Means of Plants Protection, Moscow, Russia Institute of Chemistry of Plant Substances Uzbek Ac. Sci., Tashkent, Uzbekistan Institute of Biochemistry National Ac. Sci. of Ukraine, Kiyiv, Ukraine Experimental Manufacturing Factory, Tashkent, Uzbekistan LTD "Innovation Biotechnologies", Moscow, Russia |
| FP6 Instrument: | STREP |

Background of the NIS group.

The Institute has significant experience (including participation in INCO-Copernicus and INTAS projects) in the development of analytical systems for monitoring of environmental pollutants. The equipment available in the Institute and skills of research groups provide possibility to realize full cycle of scientific and technological works, commencing from obtaining specific antibodies and finishing fabrication and validation of experimental series of test-systems. For present-day the research collective has necessary reactants for selective and specific detection of pesticides from the most broadly used classes, number of antibiotics and endocrine-disrupting compounds; it has also experience in working and/or intimate contacts connected with immunodetection of mycotoxins and dioxin-like compounds. Experience in working with these substances will allow elaborate and validate analytical techniques for the detection of target pollutants in the given project. The Institute of Biochemistry has formed

close research contacts with partners from EC countries (Sweden, Germany, Spain, France, Great Britain), scientific organizations and small enterprises from different NIS countries. The NIS research consortium will include specialists in development of novel analytical techniques, monitoring of agricultural sources, feeds, preparing of rules quality control and scaled manufacturing of immunoanalytical test-systems.

Specific tasks of the NIS group and their relevance.

The research group might be responsible for development and validation of analytical techniques for express sensitive revealing of undesirable substances in animal feed. Coming from practical requirements towards the monitoring of different feed classes, such analytical techniques as microplate immunoenzyme assays, electrochemical immunosensors, membrane test-systems for qualitative or quantitative analyses may be realized. Row of substances to be analyzed will include mycotoxins, plant toxins, dioxins and dioxin-like substances, antibiotics and coccidiostats. Methodology of hapten design, screening and optimized combining of different antibody preparations will allow elaborate test-systems both for individual and class-specific detection of target substances.

Main objectives of the NIS group.

The contribution of the Institute or a local consortium to be organized upon its base into the decision of the STREP's tasks may consist in:

- ❖ Obtaining and characterization specific antibody and intermolecular conjugates for revealing of toxic compounds to be controlled in feed;
- ❖ Development of prototype analytical systems, including ones for express out-of-lab testing;
- ❖ Verification of the test-systems using panels of the samples of agricultural and food products, formed in the target regions (including production to be exported to EC countries);
- ❖ Comparison of the developed and traditional analytical methods;
- ❖ Development of monitoring rules for hazardous substances in feed for NIS that should be based on common EC approaches;
- ❖ Preparing to scalable fabrication of the developed analytical systems.

Main prospective results.

The analytical systems to be developed should ensure quantitative control of toxic pollutants with assay duration no more than 1-1.5 hours for microplate assays, 20-30 min for electrochemical assays and 10-15 min for membrane test-systems. Revealing of no less than 80-90% of target substances independently from their molecular form should be reached. Sensitivities of the assay should be in accordance with maximal permissible levels stated in EC for different classes of pollutants. Qualitative assay in out-of-lab conditions should be assured by membrane test-strips.

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| Head of the Project: | Dzantiev Boris, Prof. |
| Organization: | Institute of Biochemistry Russian Ac. Sci. |
| Title of Project: | Express monitoring of content and physiological status of pathogenic microorganisms in drinking water sources |
| FP6-TP5 Specific Area: | T 5.4.8.3. Pathogens in drinking water sources |
| Contact Persons and Contacts: | Prof. Dzantiev Boris T : 7 (095) 954-5283 F : 7 (095) 954-2732 dzantiev@inbi.ras.ru www.inbi.ras.ru |
| Collaboration: | Institute of Biochemistry and Physiology of Microorganisms Russian Ac. Sci., Pushchino Scientific Center of Applied Microbiology, Obolensk Kazan State University Tula Technological University SME "IVA", Ekaterinburg LTD "Econix", Moscow |
| FP6 Instrument: | STREP |

Specific tasks of the consortium. The complex characterization of pathogenic contaminants in drinking water sources intends undertaking of an express analysis that includes determination of total toxicological parameters of the tested sample, identification of concrete groups of microorganisms and testing their physiological status. There is seems to be reasonable to combine for these purposes immunochemical and enzymatic analytical methods within the framework of uniform automated compact system with rapid quantitative detection based on electrochemical sensitive elements.

Background. The consortium members have experience in the development of electrochemical immunosensors (more than 20 articles in international journals, including ones in co-authorship with European research groups), capacity of the interaction with regional state and public ecological organizations (Mosvodokanal (Moscow water-supply service), Association of Ecological Education, etc.) that will ensure both high scientific level of the investigations and possibility of their broad approbation, being of interest as for NIS, so for EC countries.

Main objectives. Tasks of the consortium may include:

- ❖ manufacturing of prototype sensoric devices;
- ❖ characterization of their specificity with the use of micro-organisms panels;
- ❖ sensors' verification for monitoring of real water courses.

Main prospective results. Immunoanalytical systems will be realized on own base of reactants (all necessary antibodies and specific reagents for immunoassays will be prepared). Enzymatic tests to be developed are based on original approaches offered by the consortium members (electrochemical checking of the life forms of microorganisms, panels of enzymes and immobilized cells for characterization of total toxicity and others).

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| Head of the Project: | Esenamanova Marina, Dr. |
| Organization: | Kyrgyz State Medical Academy/ NGO "Preventive medicine" |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Esenamanova Marina T: (+0 132) 51 19 70 F: (+0 132) 54 45 73 Sp313@mail.gov.kg |
| Collaboration: | We can offer the research developments in the field, information exchange, scientific cooperation, case study, statistics. Research in the field of brucellosis identification and prevention, development and implementation of sanitary and hygiene measures. |
| FP6 Instrument: | Any |

Short Description of the Project:

17. BSE infectivity of milk, milk products and meat derived from goats Brucellosis incidence level in the territory of Kyrgyzstan has been raised 5 times for the period from 1990 to 2003. Every year 42 family pestholes of brucellosis are registered. Number of infected children in the age before 14 and teenagers has been permanently increasing. For Naryn oblast the percentage of brucellosis incidence is up to 28,6%, from them 7,4% are the children youngest than 7 years old, for Issyk-kyl oblast this rate is 18,8%, for Chu oblast - 16,7%. For 17-21% of children an acute form of disease becomes chronic and for adults this rate is up to 80%. Milk and milk products are the main food for countrymen. So serious situation requires new approaches to prevent brucellosis, thorough study of children and adults nutrition, implementation of developed methods of brucellosis determination in milk products.

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| Head of the Project: | Fornal Józef, Prof. |
| Organization: | Institute of Animal Reproduction and Food Research, Division of Food Science |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Fornal Józef T: (48 89) 5234672 F: (48 89) 5240124 fornal@pan.olsztyn.pl www.pan.olsztyn.pl |
| Collaboration: | We can offer research development in the field of research in the whole food production chain from the field to fork, we are looking also on information exchange in mentioned above subject and co-operation in EU grants. We are looking for research development and implementation of scientific results in industry. |
| FP6 Instrument: | Any |

Short Description of the Project:

Immunogenic and allergenic of food components; identification of potentially beneficial compounds from the viewpoint of human nutrition and their transformation in food processing, its sensory consequences; bioavailability of selected food components and their influence on life processes; probiotic functions of milk fermentation bacteria in the intestine; relations between functional properties and microstructure of food; constructing ion-selective electrodes and sensors designed for food analysis.

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| Head of the Project: | Grundas Stanislaw, Prof. |
| Organization: | Institute of Agrophysics of Polish Academy of Sciences |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Grundas Stanislaw T: (+48 81) 744 50 61 F: (+48 81) 744 50 67 grundas@demeter.ipan.lublin www.ipan.lublin.pl |
| Collaboration: | We can offer research developing in the field of research in the whole food production chain from the field to fork. We are looking for information to exchange in mentioned subject and producers of this kind of equipments in collaboration with the Institute of Agrophysics in St Petersburg, Russia. Institute of Agrophysics of Russian Academy of Sciences, St Petersburg. University of Agriculture in Prague, Czech Rep. |
| FP6 Instrument: | Any |

Short Description of the Project:

X-ray diagnostics gives an opportunity to estimate biological and technological importance of the found out deviations from norm. The food products or its components are the main object of interest. The X-ray diagnostic is very promising method. It is necessary to work out the more modern device for food control and computer processing of received X-ray images. It will make possible more precise distinction of details of grains or other foods and their quality from field to fork basing on equipment produced in collaboration with Institute of Agrophysics in St Petersburg, Russia.

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| Head of the Project: | Hagn Alexandra, Dr. |
| Organization: | GSF Nat. Research Center for Environment and Health; Institute of Soil Ecology |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Hagn Alexandra T: 0049-89-31872903 F: 0049-89-31872800 schloter@gsf.de www.gsf.de/ibo |
| Collaboration: | We can offer technical support in molecular biology as well as in field application. |
| FP6 Instrument: | Any |

Short Description of the Project:

We are working on the detection of genes involved in the antagonistic biocontrol of phytopathogens (e.g. *P. citricola*; *G. graminis*) using molecular tools like metagenomics and metatranscriptomics. We want to understand the potential of these functions in different soils and how gene expression is regulated. Our main aim is to develop techniques for a stimulation of gene expression in soil under high pressure of phytopathogens.

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| Head of the Project: | Ivanova Alla, Dr. |
| Organization: | Research & Production Company 'IVA' Ltd. |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Ivanova Alla T: +7 (343) 251-96-71 F: +7 (343) 257-24-15 allavl@usue.ru www.iva.usue.ru |
| Collaboration: | We can offer research, licensing, information exchange on the development of sensors, instruments, methods of analysis of biological objects. I'll represent research team which successfully carries out ISTC projects for several years. We are looking for a partner for mutual research and legalization, promotion of the product. We are interested in intellectual property protection actions. |
| FP6 Instrument: | Any |

Short Description of the Project:

Establishing collaboration with foreign partners in the below listed fields and promoting commercial product: electrochemical sensors, instruments, methods, techniques for food stuff quality and safety assessment, for diagnostics of infection diseases and oxidative stress. I am interested in opportunities of current and future funding.

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| Head of the Project: | Joldasova Elizaveta |
| Organization: | Institute of Chemistry of Plant Substances, Academy of Science of Uzbekistan |
| Title of Project: | Assessment of the safety of the phytoestrogens/androgens from Central Asia plants as biologically active food components. |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Joldasova Elizaveta T: +998 71 1625913 F: +998 71 1206475 root@icps.org.uz |
| Collaboration: | We can offer the developing scientific collaboration in the field of research of natural compounds from plants as biologically active food components and study of their structure and potential tumor /anti tumor activity. We are looking for licensing contracts. |
| FP6 Instrument: | Any |

Short Description of the Project:

The main objectives of the project consist of the selection of hormone-like substances from plants of Central Asia and determination of their safety for use as biologically active food components.

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| Head of the Project: | Kaznina Natalya, Dr. |
| Organization: | Institute of Biology Karelian Research Centre RAS |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Kaznina Natalya T: (+7-8142)769810 F: (+7-8142)769810 biology@krc.karelia.ru |
| Collaboration: | We can offer the information on accumulation and distribution Cd and Pb in plants of perennial grasses and annual cereals of different species, to give an ecology-physiological rating metal tolerant of these species. We can offer plant species for use in phytoremediation of soils, and also offer scientific cooperation on problems of plants metal tolerant and phytoremediation of contaminated soils. We are looking for scientific partners. |
| FP6 Instrument: | Any |

Short Description of the Project:

Now the soils and plants of meadows in the world around factories and near motorways are contaminated by heavy metals. The subjects of our researches are: to select and test the most promising species perennial grasses to extract heavy metals from contaminated soils; to select and test species of with low accumulation capacity to be used as cattle forage; study of mechanisms of exclusion, uptake, transport and accumulation of heavy metals in the perennial grasses and annual cereals. Our research is support by INTAS grant (N^o 00-203).

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| Head of the Project: | Khachatryan Nune, Dr. |
| Organization: | University of Hohenheim |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Khachatryan Nune T: +49 711 45 30 400 F: +49 711 459 3709 nune@uni-hohenheim.de http://www.uni-hohenheim.de/ |
| Collaboration: | We can offer methods of economic and econometric analysis in area of food safety and quality (enforcement, monitoring and control of food regulations along the value chain. Agricultural technology scientist for cereal production and processing; administrative key personnel for government food regulations. |
| FP6 Instrument: | Any |

Short Description of the Project:

National SPS regulations on aflatoxin in cereals, their enforcement, monitoring, detection, control mechanism in Russia, and implication of compliance with EU standards will be investigated. Food standards system will be assessed through value chain analysis. Survey techniques will examine current aflatoxin-standards along cereal value chain. The evaluation of compliance with EU aflatoxin standards, and of application of more safety production, storage, processing and transporting technologies, will follow utilizing the methods of comparative advantage analysis.

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| Head of the Project: | Khaitov Rahim, Director of the Institute, Academician of the Russian Academy of Medical Sciences |
| Organization: | Institute of Immunology, Moscow, Russia |
| Title of Project: | Creation of the new methods of diagnostics and treatment of allergy diseases |
| FP6-TP5 Specific Area: | T 5.4.8.1. Investigating the cause of asthma and allergy |
| Contact Persons and Contacts: | Khaitov Rahim, Director of the Institute, Academician of the Russian Academy of Medical Sciences T: +7 095 1177844 F: +7 095 1171027 rkhaitov@newmail.ru |
| Collaboration: | |
| FP6 Instrument: | IP |

Project purpose:

Development of innovative technologies of asthma and allergy prognosis, early detection, control of the efficacy of therapy, prophylactics, upgrade of life quality of allergic patients, living in different climate-geographic-ecology regions of Russia.

Main directions:

- ❖ Development of experimental model of asthma in mice for screening estimation of environmental influence as inductor and elicitor of asthma and allergy.
- ❖ Development of PCR diagnostic system for detection of asthma-associated viruses (adenoviruses etc.) in human and for monitoring of viral load, including the estimation of anti-asthmatic and anti-viral drugs efficacy.
- ❖ Establishing of the influence of extreme changes in food regimens and character on clinical course of asthma and allergy, and also on therapeutic efficacy of anti-allergic drugs.
- ❖ Clarification of the influence of environmental factors as inductors and elicitors of asthma and allergy depending of HLA-genotype.
- ❖ Detection of the influence of gene modified food products, plants (including pharmacopean) on their allergenic activity; development of gene-diagnostic systems for detection and quantification of such modifications.
- ❖ Estimation of the risk of development of allergic and pseudo-allergic reactions on gene modified products.
- ❖ Investigation and estimation of the role environmental factors (incl. climate and geographic features of region, anthropogenic and technogenic ecology factors, of social-economic, professional, ethnic features) on allergic diseases distribution and features of its clinical course, allergen spectrum, in the population of different age living different regions of Russia.
- ❖ Investigation of immune cell interactions and immune response regulation in food allergy and food intolerance.
- ❖ Development of the complex of diagnostic method for detection of food allergy and food intolerance, development of the approaches for food allergy and food intolerance therapy. Investigation of the duration of food allergy and food intolerance symptoms based on long-term observations, development of the complex program of diagnostics, verification and the control of therapy and immunoprophylactics of food allergy and food intolerance.
- ❖ In course of epidemiologic investigations to research the distribution of food allergy and food intolerance, perform the etiologic and trigger role of food allergens in formation of allergic diseases in different age groups of population of different regions of Russia.
- ❖ Development of new technologies to decrease the allergenicity and side reactions of food products in food allergy and food intolerance.
- ❖ Development of new food allergens and its introduction to clinical practice for differential diagnostics of food allergy and food intolerance.
- ❖ Investigation of cross reactivity of food allergens and other groups of allergens, its influence on the development, clinical course and prognosis of bronchial asthma, atopic dermatitis and food allergy in different age groups of population of different regions of Russia.

- ❖ Estimation etiologic and trigger role of infection and non infection factors in pathogenesis of food allergy and food intolerance, bronchial asthma, atopic dermatitis in different age groups of population of different regions of RF.

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| Head of the Project: | Kharchenko Petr, Corr. Member of RAAS, Prof. |
| Organization: | All-Russian Institute of Agricultural Biotechnology (ARRIAB), Moscow, Russia |
| Title of Project: | The Black Sea Biotechnological Network |
| FP6-TP5 Specific Area: | 5.5. Stimulating international cooperation; Initiatives aimed at promoting bi-regional dialogues, in particular the following field: EU-Black Sea Region network for biotechnology, agriculture and food sciences and technologies |
| Contact Persons and Contacts: | Prof. Kharchenko Petr T: +7 095 976-65-44 F: +7 095 977-09-47 kharchenko@iab.ac.ru |
| Collaboration: | |
| FP6 Instrument: | SSA |

Objective

The objective is to create a computer-facilitated network that will promote the cooperation among the agrobiotechnological institutes within the Black Sea Region, disseminate new data and methodologies in the relevant fields of knowledge, and establish the on-going collaboration between the target groups and individual scientists in the particular fields of agricultural biotechnology and ecology.

Scope and specific targets of the project

The project will focus on the crucial aspects of agricultural biotechnology and ecology, such as the development and application of current DNA technologies (DNA markers, DNA diagnostics, GMO, and GMO control). The immediate goals of the project are:

- ❖ working out the logistics of cooperation among the institutes, research groups, and individual scientists in the area,
- ❖ establishing a web site and a database for rapid exchange of new ideas, methods and experimental data,
- ❖ developing a thesaurus covering the major issues of molecular breeding and ecology.

Realization of the project

With its highly experienced team of researchers in cell and molecular technologies, including genetic engineering, DNA markers, DNA diagnostics, and database building, ARRIAB is in an excellent position for rapid and successful realization of the project.

Summary and the final outcome

Establishing the network will help agricultural biotechnologists in the Black Sea Region focus their efforts on the most advanced issues and methodologies of agricultural biotechnology and ecology. The project will consolidate the research community in the area, provide a long-term basis for efficient collaboration between the institutes and help the individual researchers to unite in the international target research teams.

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| Head of the Project: | Kilchevsky Alexander, Prof. |
| Organization: | Institute of Genetics and Cytology at National Academy of Sciences of Belarus |
| Title of Project: | Biotechnological creation of high productive ecologically stable plant varieties. |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Kilchevsky Alexander T: +375(17)2841856 F: +375(17)2841856 S.Dromashko@igc.bas-net.by |
| Collaboration: | We can offer the research development and information exchange. Scientific areas of activity, research contract. |
| FP6 Instrument: | IP, STREP |

Short Description of the Project:

Ecological aspects of plant breeding, creation of high productive ecologically stable plant varieties at the basis of biotechnology for environmentally friendly production of ecologically safe produce.

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| Head of the Project: | Koroleva Olga, Dr. |
| Organization: | Institute of Biochemistry Russian Ac. Sci. |
| Title of Project: | The influence of beverages with different antioxidant activity on oral health |
| FP6-TP5 Specific Area: | T.5.4.3.2. Food components preventing dental diseases |
| Contact Persons and Contacts: | Dr. Koroleva Olga T: 7 (095) 952-8799 F: 7 (095) 954-2732 dzantiev@inbi.ras.ru www.inbi.ras.ru |
| Collaboration: | The 6 th Moscow State Hospital, Russian Scientific Research Institute for Brewing, Soft Drinks and Wine RAAS |
| FP6 Instrument: | STREP |

Background of NIS Participants.

The Group "Enzymatic aspects of biodegradation" was initially aimed at chemical, structural and electrochemical investigations of copper-containing proteins and their potential applications. The main part of the research performed by the group comprised the application of these enzymes in biosensor technology, in particular for environmental monitoring and food quality certification. The present work is focused on study of wine and plant polyphenols and their antioxidant activity. The group developed method for determination of antioxidant activity of individual compounds possessing antioxidant activity using biosensor based on laccase and tyrosinase. We also started to study flavonoids from fruit and vegetables and preservation of their antioxidant activity during processing of wine especially when new different technological approaches are applied. The group members are skilled in the isolation of enzymes, kinetic study of antioxidant activity, polyphenols isolation and characterization, EPR spectroscopy study of free radicals decay kinetic. The research activity is supported by Russian Foundation for Basic Researches and Ministry of Education and Science. The Group has regularly participated in EU and NATO projects over more than eight years. The research activity of the group is supported by Russian Foundation for Basic Research and Ministry of Science and Technological Politics. The Group has regularly participated in EU and NATO projects over more than eight years.

Summary

Human periodontal diseases (PD) are wide spread among Russian population according to medical statistic database. It is well documented that PDs are inflammatory disorders characterized by tissue damage mediated by host-parasite interactions leading to the loss of connective tissue and bone around the roots of teeth. The role of damages induced by free

radicals in pathogenesis and prophylactic of PDs has been studied poorly in spite of the fact that free radicals are involved in most inflammatory pathological conditions. It has been assumed recently that PDs are associated with imbalance between oxidants and antioxidants. The shift of oxidants formation occurred due to increasing of free radical production and defect in the total antioxidant activity of saliva. Therefore the effect of beverages components, especially those possessing antioxidant activity, on the mechanism of development of PDs is of great importance. The aim of the project proposed is to compare the influence of beverages with different antioxidant activity, individual antioxidants of plant origin and plant extracts as well as beverages containing plant extracts on antioxidant activity of saliva of individuals with apparently healthy gingivitis and patients with PDs.

Objectives

- ❖ To carry out a baseline examination included assessment of plaque, gingivitis, probing pocket depth (PPD), probing attachment level (PAL) and radiographic bone height (RABL) of individuals with apparently healthy gingivitis and patients with periodontal diseases;
- ❖ microbiological tests for plaque samples will include darkfield and phase-contrast microscopy; polymerase chain reaction assays (PCR) and "real-time" PCR for quantification of specific microorganisms in plaque which really contribute to the pathological mechanisms in periodontal disease;
- ❖ determination of antioxidant status of saliva will include the measurements of total antioxidant activity using ABTS assay in kinetic mode, activity of oral peroxidase and concentration of ascorbic acid;
- ❖ monitoring of patients response to uptake of beverages with different antioxidant activity, individual antioxidants of plant origin and plant extracts as well as beverages containing plant extracts using approaches listed above.

The results of the study will assist in designing specific functional beverages for prevention and care of periodontal diseases.

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| Head of the Project: | Koroleva Olga, Dr. |
| Organization: | Institute of Biochemistry Russian Ac. Sci. |
| Title of Project: | Role of humic and humic-like substances produced by basidiomycetes in enzymatic proceses in soil – plant system |
| FP6-TP5 Specific Area: | T.5.4.6.5 Reduced fertiliser inputs through improved management of soil microbes |
| Contact Persons and Contacts: | Dr. Koroleva Olga T: 7 (095) 952-8799 F: 7 (095) 954-2732 dzantiev@inbi.ras.ru www.inbi.ras.ru |
| Collaboration: | Moscow State University (Soil Science and Chemistry Faculties) |
| FP6 Instrument: | STREP |

Background of NIS participant

The Group "Enzymatic aspects of biodegradation" was initially aimed at chemical, structural and electrochemical investigations of copper-containing proteins and their potential application for bioremediation. The main part of the research performed by the group comprised the application of these enzymes in biosensor technology, in particular for environmental monitoring. The present work is focused on bioconversion of agricultural wastes of different origin by fungi (including thermophilic and alcalifilic ones) and the role of the pool of oxidoreductase and other extracellular enzymes of soil saprotrophs in the soil fertility and protection of agricultural plants from phytopathogens. The group members are skilled in the isolation of soil microorganisms and pure cultures from decayed agricultural residues of various origin with special reference to the role of extracellular oxidative (laccases, peroxidases) enzyme in the rate limiting steps of microbial decay of major plant biopolymers. The research programme is also focused on chemical, structural and electrochemical investigations of humic substances including their capacities in detoxification and bioremediation of soils polluted by heavy metals and organic xenobiotics. Biological effects of humic substances on microbiota are

under investigation now. Special attention is given to the development of bioremediation approaches to soil and water decontamination along with methods for evaluation of environmental risks associated with economic activity in industrial and agricultural sectors. The research activity is supported by Russian Foundation for Basic Researches and Ministry of Education and Science. The Group has regularly participated in EU and NATO projects over more than eight years.

Summary

The main aim of the project is to study humic like substances (HLS) produced by wood-degrading fungi and soil humic acids and compare their influence on soil microorganisms and soil – plant system. The investigation of their influence on soil fertility *via* complexation with enzymes and nutrients uptake and *via* direct land field experiments will be performed. Special attention will be paid to the effects of target humic and humic-like material on the disruption of soil structure and on the desorption/sorption of selected clay-associated nutrients. A systematic study on interaction of the well structurally-characterized HS and HLS with different types of xenobiotics will be used for establishing of “structure-detoxifying property” relationships. The proposed approach allows to gain pre-competitive theoretical and applied knowledge essential for restoring chemical, physical and biological properties of polluted soils and as a result to improve plant health and fitness, production of high quality food and conservation of natural resources.

Objectives

The new group of humic substances - humic-like substances (HLS) will be studied. They represent substances obtained in rather short periods of time by composting and solid-phase fermentation of agricultural residues (soil and wood-degrading fungi).

The study of their detoxifying potential, complexation with “potentially toxic metal” and beneficial effect on living organisms will be carried out clarifying their role in environment and evaluating their application in bioremediation.

One of the most important mechanisms of humic materials influence on biochemical reactions in soil is via formation complexes with enzymes or via direct interaction with them as substrate of enzymatic reaction. The processes might be affected greatly by metal ions (particularly potentially toxic metals) presented in soils. Therefore, the molecular mechanisms of HS and HLS action on enzymatic processes in soil (oxidation-reduction) in presence of toxic metals will be studied.

Complexes between HS, HLS, metal ions (or other xenobiotic) and enzymes will be characterized in respect to composition, structure, properties and stability of their components. Molecular mechanisms of such complex system as HS and HLS metal ions and enzymes will be modelled using thermodynamic approaches.

This study allows predicting enzymatic processes taking place in soil-plant system.

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| Head of the Project: | Kovarskaia Ioulia |
| Organization: | IMAGINA BIOTEK |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Kovarskaia Ioulia T: +34 948 318252 F: +34 848 426010 julia@ibiotek.com http://www.imaginabiotek.com |
| Collaboration: | We can offer software platforms for laboratories, traceability software platforms, RFID systems, business platforms for the food and agriculture sectors, specific software development for projects, etc. We would like to collaborate with institutions investigating new methods of analysis, detection and control, and traceability processes. We are looking for Scientific partners for new projects. |
| FP6 Instrument: | Any |

Short Description of the Project:

Universidad Pública de Navarra is a leading university in engineering and agricultural sciences. IMAGINA BIOTEK is an spin-off project created by a group of young scientists with a solid experience in research and entrepreneurship. The main mission of the company is to provide services related to engineering and technology in the fields of health and life sciences. Services range from software development to consulting, project management. The company has two main research lines: bioinformatics and information systems. We can offer software platforms for laboratories, traceability software platforms, RFID systems, e-business platforms for the food and agriculture sectors, specific software development for projects, etc.

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| Head of the Project: | Labarga Alberto, Dr. |
| Organization: | Universidad Pública de Navarra |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Labarga Alberto T: +34 948 318252 F: +34 848 426010 alberto.labarga@unavarra.es http://www.unavarra.es/ayc/alberto.labarga |
| Collaboration: | We can offer software platforms for laboratories, traceability software platforms, RFID systems, ebusiness platforms for the food and agriculture sectors, specific software development for projects, etc. We would like to collaborate with institutions investigating new methods of analysis, detection and control, and traceability processes. We are looking for Scientific partners for new projects. |
| FP6 Instrument: | Any |

Short Description of the Project:

Universidad Pública de Navarra is a leading university in engineering and agricultural sciences. IMAGINA BIOTEK is an spin-off project created by a group of young scientists with a solid experience in research and entrepreneurship. The main mission of the company is to provide services related to engineering and technology in the fields of health and life sciences. Services range from software development to consulting, project management. The company has two main research lines: bioinformatics and information systems. We can offer software platforms for laboratories, traceability software platforms, RFID systems, e-business platforms for the food and agriculture sectors, specific software development for projects, etc.

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| Head of the Project: | Luksiene Zivile, Dr. |
| Organization: | Vilnius University, Institute of Material Science and Applied Research |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Luksiene Zivile T. +370 5 2698725 T. +370 5 2698676 Zivile.Luksiene@mtmi.vu.lt http://w3.vu.lt |
| Collaboration: | We can offer technical support, knowledge, information exchange, develop prototype of light source, necessary for illumination of the surface of foods. We are looking for scientific as well as manufacturer partner. |
| FP6 Instrument: | Any |

Short Description of the Project:

Biophotonic technology based on interaction of two absolutely non-toxic elements- visible light and organic photoactive compound, named photosensitizer.usually photosensitizer tends to accumulate in the microorganism. After following irradiation of microorganism with visible light, induction of phototoxic reactions is triggered. Because photosensitizer is localized in the microorganism, selective destruction of microorganism is guaranteed.

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| Head of the Project: | Medvedeva Svetlana, Dr. |
| Organization: | A.E. Favorsky Irkutsk Institute of Chemistry SB RAS |
| Title of Project: | Antianemic nutrients from natural raw materials |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Medvedeva Svetlana T. +8(3952)-42-58-71 F. +7(3952)-41-93-46 Patent@irioch.irk.ru |
| Collaboration: | We can offer the information exchange on chemistry of metal-containing nanocomposites of natural origin, on the methods of their synthesis and isolations as well as research and development of new nutrients and drugs on the basis of different components isolated from healing Siberian Plants. We are interested in partners, which particularly field of research is synthesis and approbation of new high bioactive products (drugs or nutrients) on the basis of natural compounds. The prospective collaboration with scientists of European countries could help us to continue our mutual investigations and tests on the Antianemic nutrient and develop some new nutrients on the basis of natural compounds' matrix and other biogenic metals. The Nutrient proposed is a good method of treating iron-deficiency anemia. |
| FP6 Instrument: | Any |

Short Description of the Project:

Asiderotic (iron-deficiency) anemia is one of the most common blood diseases. It can be preventively treated by the special prophylaxis arrangements using non-toxic nutrients, containing iron. At the moment all the known iron-containing low-molecular medicines can make a correction of iron-deficiency, but the most of them have drug side effect, and it takes a long period of times for their administration. We have synthesized a water-soluble non-toxic iron-containing drug (nanocomposite) on the basis of natural polysaccharide (biogene and abiotic ones) for parenteral dosage (tested *in vivo*). The nutrient administration results in better and qualitative recovery of organs and in better restoration of hemoglobin index in compare, for example, with such preparation as Ferrum Lek. In addition to that our drag possesses an immune stimulating effect.

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| Head of the Project: | Nasyrova Firuza, Dr. |
| Organization: | Institute of Plant Physiology and Genetics, Tajik Academy of Sciences |
| Title of Project: | GMO testing in food, seeds, feed, etc. |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Nasyrova Firuza T. (992-372) 211-888 fnasyrova2002@yahoo.co.uk |
| Collaboration: | We need in collaboration with such laboratories in the EU and NIS. We need in scientific collaboration. |
| FP6 Instrument: | We aren't involved in FP6. |

Short Description of the Project:

GM crops are increasingly being introduced into the world's food supply. Concerns raised by consumers and regulatory agencies in various countries have highlighted the need for reliable and accurate testing for the presence and the amount of GM-components.

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| Head of the Project: | Panin Alexander, Prof., Academician of RAAS, Member of the OIE Terrestrial Animal Health Standards Commission |
| Organization: | All-Russian Center on Quality and standardization of veterinary medications and feed (FGU «VGNKI») |
| Title of Project: | Development of novel bioproducts with optimal activity for human normal flora correction |
| FP6-TP5 Specific Area: | T.5.4.4.1 Origin and development of unintended micro-organisms in the food and feed chains |
| Contact Persons and Contacts: | Davydova Ekaterina T: +7 (095) 259-27-18, F: +7 (095) 259-27-18 pcr-lab@elnet.msk.ru http://www.pcr.narod.ru |
| Collaboration: | |
| FP6 Instrument: | IP |

Short Description of the Project:

We have developed test-systems for detection of pathogenic microorganisms which can cause food toxico-infections. In our tests we use PCR with specific primers that allow amplify DNA fragment of the microorganism with high sensitivity and specificity.

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| Head of the Project: | Panin Alexander, Prof., Academician of RAAS, Member of the OIE Terrestrial Animal Health Standards Commission |
| Organization: | All-Russian Center on Quality and standardization of veterinary medications and feed (FGU «VGNKI») |
| Title of Project: | Development of novel bioproducts with optimal activity for human normal flora correction |
| FP6-TP5 Specific Area: | T.5.4.4.2. Emerging technologies for food/feed traceability including monitoring the manufacturing and handling practices in the total chain |
| Contact Persons and Contacts: | Davydova Ekaterina T: +7 (095) 259-27-18, F: +7 (095) 259-27-18 pcr-lab@elnet.msk.ru http://www.pcr.narod.ru |
| Collaboration: | We are looking for certification by standart ISO 9000:2001; fields of application - detection and identification of GMO in feed and farm products. We are going to be accredited by the "SGS Vostok limited" company. |
| FP6 Instrument: | IP |

Short Description of the Project:

We use PCR with specific primers for identification ruminant (cattle and small cattle), chicken , swine tissue, tissue of carnivore. For GM maize or soy detection we amplify endogenous control target (unique for maize or soy DNA fragment) and GM target (DNA of S35 promotor, NOS terminator) which indicate on presence GM maize or soy. We use PCR with specific primers for identification of the specific transgenic events. For quantitative detemination GMO is used multiplex Real time PCR.

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| Head of the Project: | Panin Alexander, Prof., Academician of RAAS, Member of the OIE Terrestrial Animal Health Standards Commission |
| Organization: | All-Russian Center on Quality and standardization of veterinary medications and feed (FGU «VGNKI») |
| Title of Project: | Development of novel bioproducts with optimal activity for human normal flora correction |
| FP6-TP5 Specific Area: | T.5.4.6.3. Linking national research communities working on E. coli O157 research |
| Contact Persons and Contacts: | Davydova Ekaterina T: +7 (095) 259-27-18, F: +7 (095) 259-27-18 pcr-lab@elnet.msk.ru http://www.pcr.narod.ru |
| Collaboration: | |
| FP6 Instrument: | CA |

Short Description of the Project:

Development and validation of methods for detection of DNA of *stx* genes (type I and type II) of entero-hemorrhagic E. coli and H7 antigene E. coli O157:H7 using PCR. Detection DNA of heat-labile and heat-stabile enterotoxins genes of enterotoxigenic E. coli using PCR.

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| Head of the Project: | Panin Alexander, Prof., Academician of RAAS, Member of the OIE Terrestrial Animal Health Standards Commission |
| Organization: | All-Russian Center on Quality and standardization of veterinary medications and feed (FGU «VGNKI ») |
| Title of Project: | Development of novel bioproducts with optimal activity for human normal flora correction |
| FP6-TP5 Specific Area: | 5.4.7.1. Feed safety control |
| Contact Persons and Contacts: | Davydova Ekaterina T: +7 (095) 259-27-18, F: +7 (095) 259-27-18 pcr-lab@elnet.msk.ru http://www.pcr.narod.ru |
| Collaboration: | We are looking for certification by standart ISO 9000:2001; fields of application - detection and identification of GMO in feed and farm products. We are going to be accredited by the "SGS Vostok limited" company. |
| FP6 Instrument: | STREP |

Short Description of the Project:

Monitoring the presence of unintended and undesirable substances in imported feeds and validation of the declared content of individual raw-materials used in the formulation. Excluding of feed adulteration with contamination of ruminant (cattle and small cattle) tissue; chicken tissue, swine tissue, tissue of carnivore, soybean or maize ingredients, genetically modified organisms. Identification of the specific transgenic events. Quantitative appreciation of percentage genetically modified organisms using real-time PCR.

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| Head of the Project: | Perminova Natalia, Dr., Timofeyev Igor |
| Organization: | State Research Center of Virology and Biotechnology "VECTOR" of the Ministry of Public Health and social development of Russian Federation |
| Title of Project: | Development of novel bioproducts with optimal activity for human normal flora correction |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Perminova Natalia, Timofeyev Igor T: (383-2)-36-62-04 F: (383-2)-36-74-09 lev@vector.nsc.ru www.vector.nsc.ru |
| Collaboration: | Technical support, licensing. We are looking for technical support, production technology development and licensing |
| FP6 Instrument: | Any |

Short Description of the Project:

Development of novel bioproducts with optimal activity. Biologically active substances have been designed based on rB.subtilis containing HuIFN- α 2 gen that demonstrate pronounced antagonistic activity against wide spectrum of pathogenic and conditionally pathogenic microorganisms, produces HuIFN- α 2, and induces synthesis of homologous: IFN- α , IFN- γ , IL-2 being introduced perorally in vivo. These strains are the basis of biologically active substances that may be used for production of food products with treating effects.

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| Head of the Project: | Petrovichev Vladimir, Vice-president of SME «ROSALKO» |
| Organization: | SME «ROSALKO» Joint Stock Company - Enzymes Technologies |
| Title of Project: | Functional protein technology and its certification |
| FP6-TP5 Specific Area: | T.5.4.3.3. Optimising food processing for nutritional and environmental quality |
| Contact Persons and Contacts: | Petrovichev Vladimir T: (095) 257-19-34 F: (095) 257-69-37 mail@rosalko.ru www.rosalko.ru |
| Collaboration: | Poultry Processing Institute, Moscow region A.N. Bakh Institute of Biochemistry, Moscow |
| FP6 Instrument: | STREP |

Applicant background

New technology providing profound conversion of meat and poultry by-products to functional protein is established in a pilot-plant scale (about 1000 kg a day per two plants in Moscow and Kaluga region). This technology combines enzymatic and thermal treatment under strictly controlled mild conditions. Refined heating procedure and protease formula results in complete hydrolysis and preventing degradation of valuable nutritional compounds. The rendered hydrolyzate (functional protein) exhibits a perfect water retaining capacity and is practically adopted as a valuable raw material for manufacturing dietary food. The Functional protein passed the first step of approval by Russian Pharmacology committee and is allowed in special diets for children with gastro enteric pathologies region.

Summary

The protein input in the food allowance of Russian population still does not attain physiological standards. One of the ways to improve protein availability is development of innovative technologies for deep processing of meat and poultry raw material.

Objectives of the applied project will include:

The applied project will be focused on up-scaling and adaptation of the new technology under different conditions in EU countries and in Russia. This objective will be pursued at the following directions:

- ❖ adaptation of the developed technology in compliance with Russian and EU legislature regulating food stuff raw material production and application;
- ❖ FMP chemical and physiological analytics;
- ❖ adaptation of the technology to requirements of the wide range of FMP consumers;
- ❖ adaptation of the technology to different types of the meat and poultry by-products.

Technical feasibility of the project and its relevance to the objectives:

The applicants dispose by facilities and expertise enabling them to evolve chemical analytics, physiological tests, engineering and marketing development of FMP technology as well as arrangement of the legislative accomplishment of the project.

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| Head of the Project: | Petrovichev Vladimir, Vice-president of SME «ROSALKO» |
| Organization: | SME «ROSALKO» Joint Stock Company - Enzymes Technologies |
| Title of Project: | Enzymatic technologies in beverage manufacturing in Russia |
| FP6-TP5 Specific Area: | T.5.4.6 - Safer and environmentally friendly production methods and technologies and healthier food stuffs |
| Contact Persons and Contacts: | Petrovichev Vladimir T: (095) 257-19-34 F: (095) 257-69-37 mail@rosalko.ru www.rosalko.ru |
| Collaboration: | A.N. Bakh Institute of Biochemistry, Moscow |
| FP6 Instrument: | STREP |

Applicant background

Rosalko group is affiliated with beverage manufacturing plants in many regions of Russia. Rosalko is the leader of the alcohol branch in Russia. These are the reasons why the applicant has deeply insighted to peculiarities of this industry in Russia. The applicant is a principal distributor of the enzymes for alimentary industry, owns the rights of exclusive distributor of Novozymes. In the same time, Rosalko has a broad expertise in branding and promotion of the beverages at Russian and export markets.

Summary

Broad application of complex enzymatic technologies is commonly acknowledged as a guide link for principal ameliorating the food-stuffs and increasing extent of the raw material conversion. Rosalko group is a leader of Russian innovation market in the field of enzymatic technologies and particularly in their application in food industry. Manufacturing fruit juices and wild-growing berry and fruit-based alcoholic beverages is an innovative highly profitable business with a considerable export potential caused by exclusiveness of regional brands produced in small batches.

Objectives of the project will include:

The applied project will be focused on adaptation enzymatic technologies for processing fruit and berry raw materials and beverage manufacturing. The treatment must lead to improvement of the beverage quality due to their clarifying and stabilization under storage, rise extent of the raw material conversion to the final product. The new technologies must be established in compliance with regulations EU, NIS countries and Russia.

Project implementation and its relevance to the objectives:

- ❖ to adapt enzyme blends and to establish protocols of their utilization in respect to each type of the raw material; pectinases, xylanases, β -glucanases and acid proteases will be considered as the acting principals of the new technologies;
- ❖ to harmonize the new technology with regulations by EU, NIS countries and Russia in order to provide broad distribution of the technology and ready products in the common economic space.

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| Head of the Project: | Piven Nadezhda, Dr. |
| Organization: | Institute of Bioorganic Chemistry of the National Academy of Sciences of Belarus |
| Title of Project: | Development of new formats of immunoanalysis for food quality control via identification and quantitative analysis of food components and environmental pollutants; carrying out of their monitoring |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Piven Nadezhda T: +37517 2648761; +37517 2637273, F: +37517 2648761; +37517 2637273 piven@iboch.bas-net.by |
| Collaboration: | We can offer collaboration in research and technological development in: elaboration of new methods, techniques of identification and quantitative determination of different food products and their components, including low molecular weight compounds, on the basis of principles of modern highly-specific and highly-sensitive (10^{-8} – 10^{-12} mol/L) immunochemical analysis; information exchange, technical support in solving of these tasks. The type of sought partner: Scientific Partner |
| FP6 Instrument: | Any |

Short Description of the Project:

Main research and technological development interest: development of new formats of immunochemical analysis and express immunoassays for food components quality control, their identification and quantitative analysis. Environmental monitoring of different pollutants content in food.

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| Head of the Project: | Protsenko Marina, Prof. |
| Organization: | Institute of Biochemistry Russian Ac. Sci. |
| Title of Project: | Statistical data-base for soy bean and potato allergens in Russia: innovative molecular biology approach |
| FP6-TP5 Specific Area: | T 5.4.2.2 Influence of dietary history on coeliac disease |
| Contact Persons and Contacts: | Prof. Protsenko Marina T: +7 (095) 954-30-66 F: +7 (095) 954-27-32 protsenko@inbi.ras.ru www.inbi.ras.ru |
| Collaboration: | Nutrition Institute, Russian Academy of Medical Sciences |
| FP6 Instrument: | STREP |

Background of NIS participant

The applicants possess a wide expertise in preparative biochemistry of the crops including potato and soybean cultivars adopted in Russia. It has facilities allowing prompt development of the allergen screening panels by immunoassay and PCR genotyping. Original studies of potato tuber proteins and their genes were previously supported by NATO RCLG grant and three grants by Russian Foundation for Basic Researches.

Summary

Potato is one of the principal crops yielded in Russian Federation. Its share attains 12% of the total population food allowance. The soybean is another important food stuff in Russia, but in contrast to potato, an essential part of this product ($\approx 40\%$) is imported to Russia from EU countries. Great contribution of both crops to the ration must attract attention to their allergen input. This requires establishing appropriate laboratory control methods and respective regulations providing permanent monitoring the potato and soybean allergens in

food and its impact on the population health. Accounting expected joining Russia to WTO, these regulations should be in agreement with the respective legislature by EU and other pivotal Russia's trade partners.

Objectives of the applied project will include:

- ❖ accumulating available statistical data about soy bean and potato allergens, evolving public statistical data-base;
- ❖ establishing advanced high throughput assay routines monitoring allergisation in different population groups, including children and teenagers;
- ❖ establishing genotyping system for express identification of the allergen-encoding DNA sequences in different samples;

In general, the project aims to integrate several groups working in fields of biochemistry, plant physiology, immunology and genetics in order to ameliorate food safety control. The developed control system including its laboratory, medical and legislation aspects may be further extended to other stuff.

Technical feasibility of the project and its relevance to the objectives:

- ❖ composing antigen panels of the principal proteins from the soy beans and potato tubers (including recombinant protein technology);
- ❖ development of express kits and protocols for discovery allergens in potato and soy bean raw materials and ready meals (e.g., potato chips) by immunological assay;
- ❖ development of express kits and protocols for discovery genes encoding principal allergens in potato and soy bean by PCR assay.

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| Head of the Project: | Reshetin Vladimir, Dr. |
| Organization: | Joint Institute of Power and Nuclear Research of NAS |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Reshetin Vladimir T: +375-17-2737953 F: +375-172994712 reshetin@sosny.bas-net http://reshetin.net |
| Collaboration: | We can offer research development and information exchange. Scientific and industrial collaboration. |
| FP6 Instrument: | Any |

Short Description of the Project:

1. MW belt furnace for potato flakes production. Productivity 50 kg/h. Operating frequency 916 MHz. Ecologically safe technology without formation of carcinogens during the process of flakes production. (In traditional wide spread technology a number of carcinogens arise in oil, especially when the oil is used many cycles). A pilot setup is designed and it will be tested at a plant in tree-four months.

2. Human health risk assessment associated with carcinogens in the environment. Modelling and development of software. Reduction of human health risk. A number computer codes were created and verified.

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| Head of the Project: | Roberts Ian, Dr. |
| Organization: | Institute of Food Research |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Roberts Ian T: +44 1603 255000 F: +44 1603 458414 ifr.communications@bbsrc.ac.uk www.ifr.ac.uk |
| Collaboration: | We can offer technical support for the characterisation of yeast strains used in commercial processes and for tracing fungal contaminants causing food spoilage. Primarily scientific but collaborative marketing of yeast strains and identification services relevant to food production and elimination of food spoilage is also of interest. |
| FP6 Instrument: | Any |

Short Description of the Project:

We are interested in characterising yeast genetic variation and its effects on metabolism. Fields of application include probiotics, flavourings, industrial fermentation and prevention of food spoilage.

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| Head of the Project: | Safarik Ivo, Prof. |
| Organization: | Institute of Landscape Ecology, Academy of Sciences |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Safarik Ivo T: +420 387775623 F: +420 385310249 uek@uek.cas.cz http://www.uek.cas.cz/en/ |
| Collaboration: | At first, we can offer our expertise in the selection of technologies or analytical procedures where magnetic techniques are applicable and promising. At second, attempts to develop magnetic separation/analytical processes for the selected areas of food and biotechnology industry will be performed. Currently, it is the area of basic research and laboratory scale applications, and the current results should be followed by the technological outcome. We are looking for both scientific and industrial partners with the interest in biomagnetic research and technology. |
| FP6 Instrument: | Any |

Short Description of the Project:

We are especially focused on the development of magnetic techniques and their applications in various areas of biosciences, biotechnology and environmental technology. For further details see <http://www.uek.cas.cz/people/safarik>.

- Preparation and application of magnetic carriers, adsorbents and substrates for isolation, preconcentration, detection and modification of high- and low-molecularweight compounds and cells.
- Preparation of review papers and review book chapters.
- Setting up and editing a journal "BioMagnetic Research and Technology" (www.biomagres.com).

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| Head of the Project: | Safronova Vera, Dr. |
| Organization: | All-Russia Research Institute for Agricultural Microbiology (ARRIAM) |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Safronova Vera T: 7-812-4761802 F: 7-812-4764362 v.safronova@rambler.ru www.arriam.spb.ru |
| Collaboration: | We can offer the following scientific investigations: 1) isolation of rhizobial strains from nodules of leguminous plants, 2) study of metabolic properties and the tolerance of strains to stress environmental conditions, 3) selection of high effective root nodule bacteria or PGPR, which will be appropriate for the inoculation of concrete crops in specific environmental conditions, 4) technical recommendations of applications. Industrial organizations or research agricultural institutes. |
| FP6 Instrument: | Any |

Short Description of the Project:

The ARRIAM has a leading position among Russian Research Institution in the field of agricultural microbiology. The ARRIAM activities extend into fundamental and applied aspects of soil microbiology, plant-microbe interactions, agriculture and ecology. Considerable study has been given to: (1) isolation of atmospheric nitrogen fixing and plant stimulating soil bacteria, (2) creation and maintenance of the National Collection of root nodule bacteria and PGPR strains, (3) taxonomic study and selection of higheffective rhizobacterial strains, which can significantly stimulate the plant growth, (4) development of biopreparations based on root nodule bacteria and plant growth promoting rhizobacteria. Recently much attention has been concentrated on the development of efficient plant-microbe symbiosis and associations for maintenance and restoring fertility in sustainable agroecosystems. The National Collection of root nodule bacteria and PGPR strains available at the ARRIAM accounts more than 700 strains of root nodule bacteria isolated from 69 different species of legumes and about 100 nonsymbiotic PGPR strains. Metabolic properties and efficiency of many groups of rhizobacteria have been studied and the most effective strains have been selected. A number of commercial biopreparations are now successfully applied in different regions of Russia for increasing the productivity of agricultural crops including traditional fodder legumes (pea, haricot bean, soya bean, alfalfa, clover, lupine, vetch and so on), wide range of grasses and vegetables. However, some extremely interesting and perspective groups of strains including root nodule bacteria of nontraditional pasture and medical legumes (such as *Astragalus*, *Hedysarum*, *Coronilla*, *Glycyrrhiza*, *Ononis*, *Galega*, *Oxytropis* and so on) are not sufficiently characterized and utilized by now.

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| Head of the Project: | Sandakhchiev Lev, Academician RAN, Director General |
| Organization: | State Research Center of Virology and Biotechnology "Vector" (SRC VB Vector), Koltsovo, Russia |
| Title of Project: | Creation of proteomics center for collective using |
| FP6-TP5 Specific Area: | T 5.4.4.1 Origin and development of unintended micro-organisms in the food and feed chains |
| Contact Persons and Contacts: | Sandakhchiev Lev, Director General T: (3832) 64-01-40 F: (3832) 32-88-31 vector@vector.nsk.su |
| Collaboration: | Institute of Cytology and Genetics of the Siberian Branch of the Russian Ac. Sci., Novosibirsk, Russia |
| FP6 Instrument: | IP |

Short Description of the Project:

Thanks to the development of high throughput DNA sequencing genomic databases of many different organisms have been established in a short period of time. Genome sequencing and allied projects have also generated new approaches to mRNA expression analysis or transcriptomics and techniques to undertake comprehensive approaches to the analysis of protein. Proteome analysis has the potential to detect and quantify hundred or even up to thousands of proteins in a single experiment. This provides the opportunity of making qualitative and quantitative assessments of changes in the protein synthesis patterns between different tissues, cells with different phenotype or genotype, healthy versus infected, and cells/tissues in the present or in the absence of drugs. Depending on the model system used, the response to different treatments or diseases stage can be followed over time, allowing the study of the kinetics of the effect of a particular drug or the identification of features that change consistently with the progression of disease. A recent study illustrates how only a combination of transcriptional imaging with proteomics can lead to a comprehensive understanding of the molecular processes within a cell. The scope of application extends from drug discovery to diagnostics, therapy, virology, biotechnology and basic research. Involvement proteomics research let us conduct investigation on higher level.

The goal of this Project is creation of proteomics center for collective using on the basis of State Research Center of Virology and Biotechnology "Vector", which gives opportunities for Institutes in Siberian region carry out joint researches and collaborate with European centers.

Vector's staff has a great experience in studying different viral pathogens, including Orthopoxviruses, HIV, Paramyxovirus, Morbillivirus, Herpesviruses and others. In particular, this research center developed candidate vaccines against Orthopoxviruses, HBV, HAV, HIV, measles, tick-born encephalitis viruses, and various perspective antiviral drugs. Institute of Cytology and Genetics (ICG) of the Siberian Branch of the Russian Academy of Sciences (Novosibirsk, Russia) staff who has a substantial experience in bioinformatics. ICG' researchers have mastered the methods of mathematics models for cellular development and construction genetic networks. Institutes of the Siberian Branch of the Russian Academy of Medical Sciences have considerable experience in study interaction between host and pathogen. Also they are studying infection diseases resistance of human, effects of drug on human (I-IV phase) and genetics of immune response to pathogens.

Using of Proteomic Center by the researchers of these institutes and EU collaborators will allow:

- ❖ Investigation of dynamic and global approach to viral and host gene expression and regulation;
- ❖ Determination of protein pathways for infection diseases;
- ❖ Search vaccine antigens;
- ❖ Development and discovery new antiviral drugs;
- ❖ Explore new diagnostics markers from different body fluids;

- ❖ Studying of disease resistance and drug resistance;
- ❖ Reveals interactions - host with pathogen, and drug with pathogen;
- ❖ Studying effects of drug on cells and tissues, which is very important for preclinical phase of development new drugs.

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| Head of the Project: | Sharmanov Toregeldy, Prof. |
| Organization: | Kazakh academy of Nutrition |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Sharmanov Toregeldy T: 8/3272/ 42- 92-03, F: 8 /3272/ 42-15-29 nursat@nutrit.kz |
| Collaboration: | Russian Institute of Biochemistry We are looking for scientific collaboration |
| FP6 Instrument: | Any |

Short Description of the Project:

This project will direct to:

- select new strains of lactobacteria from different sources;
- study of their biochemical and immunobiological characteristics;
- optimise food processing.

Immunodeficiency model will use for assessment biochemical properties of new products. Clinical investigation will carry out in zone of former Semypalatinsk radio nuclear poligon.

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| Head of the Project: | Snopok Boris, Dr. |
| Organization: | V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Snopok Boris T. +380(44)2655626 F. +380(44)2651827 b_snopok@yahoo.com |
| Collaboration: | We can offer the design and development the instrument prototypes and analytical methods thereon for definite application (detection/ monitoring of potential xenobiotics or products quality) in the area of Biotechnology, Agriculture and Food. It can be various partners depending on the joint activity: it can be basic science in the frame of common scientific project; joint design of new instrument for definite application and development of technology for detection of potential xenobiotics, monitoring the technological processes or product quality estimation. |
| FP6 Instrument: | Any |

Short Description of the Project:

Specific areas of research are: engineering of organic/inorganic architectures for sensing application; molecular control of nanoscopic processing; integrated optics (surface plasmons, differential polarization interferometer); acoustic transducers; the design and development of multichannel devices for gaseous (electronic nose) and liquid phases. The last works were devoted to the development of new analytical techniques for detection of drug contaminations in food, persistent organic pollutants in environment and transduction pathway in virus infections.

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| Head of the Project: | Starodub Nickolaj, Prof. |
| Organization: | A.V. Palladin's Institute of Biochemistry of Ukrainian National Academy of Sciences |
| Title of Project: | Development of different types of biosensors for multi-parametrical water and food quality control |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Starodub Nickolaj T. 380-44-229 47 43 F. 380-44-279 63 65 nstarodub@hotmail.com |
| Collaboration: | <p>We can offer the wide examination of some still developed prototypes of biosensors for the express control of some biochemical, immunochemical and bacteriological indexes.</p> <p>We can develop together with partner some new variants of biosensors as well as some concrete algorithms for the determination of above indicated indexes.</p> <p>We can organize jointly manufacture of some collaborative developed biosensors.</p> <p>We are looking for:</p> <ol style="list-style-type: none"> 1) joint development of principal new instrumental analytical devices based on the biosensorics technology; 2) working out of specific algorithms of biosensor analysis of concrete undesirable chemical and biological substances in different objects of environment, food and feed; 3) extension of biosensors analysis in different fields of human activity; 4) certification of the developed biosensor based express methods of medical diagnostics and environment control; |
| FP6 Instrument: | Any of FP6-TP5 |

Short Description of the Project:

We have experience in development of different types of biosensors, for example: 1) opto-electronic ones based on surface plasmon resonance, ellipsometry with total inner reflection, photoluminescence of porous silicon 2) electrochemical biosensors with the use of planar electrodes, electrolyte-insulator-semiconductor structures, ion-sensitive field effect transistors, 3) thermal ones based on solid phase thermistors and directed heat transfer from reacted molecules to registers. Some of these prototypes were used for multi-parametrical determination of different substances (heavy metal ions, some pesticides, nonylphenol, T-2 mycotoxin, various specific antibodies, some microbial contamination of air and others). Moreover we developed optical biosensors with the use of Daphnia and bioluminescent bacteria from Black sea for the express instrumental determination of total toxicity of environment objects. We have experience in application number of biosensors for feedback control of water purification technology.

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| Head of the Project: | Suvorova Galina, Dr. |
| Organization: | State Scientific Center the All-Russia Research Institute of Legumes and Groat Crops |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Suvorova Galina T. + 7 (0862) 403224 F. + 7 (0862) 403130 office@vniizbk.orel.ru |
| Collaboration: | We can offer: - the developed methods of tissue culture for grain legumes, buckwheat and millet; - new cultivars of pea, lentil, soya, beans, buckwheat, millet; - technologies: consortive plant-microbe systems; - information exchange. European Scientific Centre, University, Research Institute, Breeding Company, Food Company. We are looking for Joint Research Project. |
| FP6 Instrument: | Any |

Short Description of the Project:

The purpose of the project: development of new cultivars of peas, lentil, soya bean, beans, buckwheat, millet for production of environment friendly high-protein food stuff without plant protection products and fertilizers. The used methods: tissue culture, embryo rescue technique, anther culture, selective media for raising of genotypes of pea *Pisum sativum*, lentil *Lens culinaris*, buckwheat *Fagopyrum esculentum*, millet *Panicum miliaceum*, soya *Glycine max*, beans *Phaseolus vulgaris*, resistant to action of stress factors and most dangerous diseases. Tissue culture methods are ecologically safe.

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| Head of the Project: | Svetoch Eduard, Prof. |
| Organization: | State Research Center for Applied Microbiology |
| Title of Project: | The technology of production and application of bacteriocin-based preparations to protect food products against enteric pathogens |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Eruslanov Boris T. + 7(0967) 36 00 79 F. + 7(0967) 36 0010, Code from Moscow (27) Erus47@yandex.ru |
| Collaboration: | We can offer the research development or licensing. We are looking for a research development or licensing. |
| FP6 Instrument: | Any |

Short Description of the Project:

Low molecular peptides of bacterial origin (bacteriocins) are a new class of antimicrobials presenting a real interest for medicine, food industry and agriculture as potential alternative for antibiotics and chemical drugs. Some bacteriocins, for example nisin, have been widely used for a long time as a preservative protecting foodstuffs. The objective of this proposal is to develop a technology of production and application of bacteriocin-based preparations to protect food products against enteric pathogens, causative agents of food-borne infections in humans. Bacterial low molecular peptides, that vary in spectrum of antibacterial activity and are able to inhibit *in vitro* the growth of food-borne pathogens, such as *Salmonella* spp., *Campylobacter* spp., international reference strains *E. coli* O157:H7, *Listeria* spp., *Shigella* spp., *Yersinia enterocolitica*, *Yersinia pseudotuberculosis*, *Staphylococcus aureus* etc., will be used in the research. We have identified and characterized all the peptides. Producing strains of the peptides are *Lactobacillus* spp., *Enterococcus* spp., *Bacillus* spp., and *Paenibacillus* spp., including author strains obtained by the staff of SRCAM. Reasons for the implementation of the

project: availability of collection of microorganisms, of bacteriocins; availability of author characterized (in respect of molecular weights, primary amine acid sequence, sensitivity to pH, temperature, proteolytic enzymes, safety for cell cultures, etc) bacterial low molecular weight peptides varying in spectrum of antibacterial activity, including those with a wide spectrum of activity; long experience in biotechnological research involving different species of microorganisms, biologically active substances, including bacteriocins; personnel skilful in designing "bioactive" polymeric materials by methods of encapsulation; availability of sophisticated laboratory and production bases allowing the implementation of the project.

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| Head of the Project: | Tatarov Pavel, Dr. |
| Organization: | Technical University of Moldova |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Dr. Tatarov Pavel T. +373(22)23-54-41 F. +373 (22) 232252 web@adm.utm.md www.utm.md |
| Collaboration: | We can offer research development and information exchange. We are looking for elaboration of methods of obtaining vegetal food with stable content of antioxidants. |
| FP6 Instrument: | Any |

Short Description of the Project:

The research activity:

- 1) Identifying indexes for determining the redox state of vegetal products of fruits and vegetables.
 - To point out the food state by evaluating stability of soluble antioxidants.
 - Appreciate the degree of correlation between the redox state and the activity of soluble antioxidants in vegetal food.
- 2) Methods and parameters of technological processes for obtaining new vegetal products based on compositions of food made of fruits, vegetables. The innovative aspect: determining some new parameters and methods of testing the redox state of vegetal products.

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| Head of the Project: | Tutelyan Victor, Academician of Russian Academy of Medical Sciences. |
| Organization: | State Research Institute of Nutrition of Russian Academy of Medical Sciences |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | T5.4.5.1 Quality and safety control strategies for food |
| Contact Persons and Contacts: | Alekseeva Irina T: +7 (095) 298-18-59, 298-18-57 F: +7 (095) 298- 18-72 tutelyan@ion.ru http://www.ion.ru |
| Collaboration: | F.F. Erisman Federal Scientific Centre of Hygiene MH, Russia A.N. Sysin State Research Institute of Ecology, Hygiene and Environmental Central Research Institute of Epidemiology MH of Russia |
| FP6 Instrument: | NoE |

Short Description of the Project:

The development and unification of the methods of the analysis, determinations and checking the chemical composition and safety of the food-stuffs and food raw material, as well as contaminants of the food - chemical and biological contaminants, including and methods of the analysis of the food additives and minor biologically active material of the food of the

natural origin. It is designed and introduced in practice the state standards for all system centre of the state sanitary checking and standardizations Centres the methods for finding genetic modified sources of the food with use the methods PCR reaction including with usage of microchips and PCR analysis at real-time. Annually in Russia is analysed over 10 thousand different kind of food raw material and food products on presence GMO sources in the food.

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| Head of the Project: | Tutelyan Victor, Academician of Russian Academy of Medical Sciences. |
| Organization: | State Research Institute of Nutrition of Russian Academy of Medical Sciences |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | T 5.4.2.1. Nutrient status and requirements of specific population groups |
| Contact Persons and Contacts: | Alekseeva Irina T: +7 (095) 298-18-59, 298-18-57 F: +7 (095) 298- 18-72 tutelyan@ion.ru http://www.ion.ru |
| Collaboration: | State Research Centre of Preventive Medicine Ministry of Health, Russia Sankt-Petersburg Mechnikov State Medical Academy |
| FP6 Instrument: | NoE |

Short Description of the Project:

Undertaking in 39 regions to Russia on 7 main federal regions of the epidemiological studies on spreading of nutrition-hung diseases (the obesity, sugar diabetes, anaemia, osteoporosis and others) and determination interconnection with nature and particularity of the feeding adult and baby population to Russia with provision for regional and economic features. The Comparison result these standard studies with European data. The planned sample selection is over 11 thousand people per annum. On the grounds of these studies are revealed the groups of the risk of the wide-spread diseases amongst adult and baby population to Russia. The Central to these studies and their purpose is a realization "Concepts state politicians sound feeding the population to Russia before 2005" (on Resolution Government RF# 917 from August 18 1998.).

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| Head of the Project: | Tutelyan Victor, Academician of Russian Academy of Medical Sciences. |
| Organization: | State Research Institute of Nutrition of Russian Academy of Medical Sciences |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | T5.4.2.2. Influence of dietary history on coeliac disease |
| Contact Persons and Contacts: | Alekseeva Irina T: +7 (095) 298-18-59, 298-18-57 F: +7 (095) 298- 18-72 tutelyan@ion.ru http://www.ion.ru |
| Collaboration: | Scientific Centre of Children Health of Russian Academy of MS Russian State Medical University MH, Russia |
| FP6 Instrument: | STREP |

Short Description of the Project:

Problem of coeliac disease treatment for children is actual in Russia and Institute of Nutrition and other scientific institutions of the country have accumulated the sufficient experience in diet therapy of this disease. For the last 10 years in country is designed and introduced variety of without gluten food-stuffs, which efficiency is confirmed by Institute of Nutrition. At the same time Institute and other scientific Institutions participate in development of the methods and practical introducing the methods of the diagnostics coeliac disease, founded on morphological study microbiobiopantes small intestine. Introduces expedient

collation and analysis different approach to problem of the diagnostics and treatments coeliac disease in Russia and EU countries for production harmonised requirements to quality and estimation to efficiency of the functional food-stuffs for diet therapy of children coeliac disease.

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| Head of the Project: | Tutelyan Victor, Academician of Russian Academy of Medical Sciences. |
| Organization: | State Research Institute of Nutrition of Russian Academy of Medical Sciences |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | T5.4.3.2. Food components preventing dental diseases |
| Contact Persons and Contacts: | Alekseeva Irina T: +7 (095) 298-18-59, 298-18-57 F: +7 (095) 298- 18-72 tutelyan@ion.ru http://www.ion.ru |
| Collaboration: | State Research Centre of preventive medicine MH, Russia Sankt-Peterburg State Medical Academy MH, Russia Institute of the medical problems of the North SD RAMN Novosibirsk State Medical Academy, Central Dental Institute MH Sytin State Research Institute of Ecology, Hygiene and Environment, Moscow State University on Biotechnology, Ministry for Education and Sciences of RF. |
| FP6 Instrument: | STREP |

Short Description of the Project:

The problem of preventive maintenances of teeth widespread diseases, including caries is more actual for Russia. Institute of Nutrition RAMN has a sufficient experience in the field of creation, estimations of efficient functional food-stuffs for preventive maintenance tooth decay, in particular, with broad usage of sugar substitutes, microelements and biologically active substances of natural origin for prevention of tooth decay and paradantosis. The significant impact herewith is connected with organized preventive work in school group and ideology is directed on use the food-stuffs and non-alcoholic drinks for nutrition in schools as a way of the preventive maintenance these wide-spread diseases and teeth cavities among the populations in Russia.

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| Head of the Project: | Vaitkuviene Aurelija, Prof. |
| Organization: | Vilnius University Material Science and Applied Research Institute |
| Title of Project: | To be confirmed |
| FP6-TP5 Specific Area: | Any of FP6-TP5 |
| Contact Persons and Contacts: | Prof. Vaitkuviene Aurelija aurelija.vaitkuviene@mtmi www.mtmi.vu.lt/dls |
| Collaboration: | We can offer research development, information exchange, education project. We are looking for a licensing contract, ethical legality , industry of diodes, optical fibres, microscopes, spectrosopes, endoscopes, termovisors, biotechnology, pharmacy industry, medical devices manufacturer, programming, imaging technology etc. |
| FP6 Instrument: | Any |

Short Description of the Project:

Nutrition influence function of celiac, genital organs. Food component influence live tissue optical properties in hormone dependent tissue. Tissue optical monitoring could be used for diet control. Nutrition impact on dysfunction, cancer development could be documented and processed. Smart optic material, less invasive access to pelvic, genital tract allows monitoring of tissue changes. Informative technologies assessment gives possibility to collect, process and exchange of digital information during procedure. Genomic, proteomic markers in live tissue gives perspective of diagnostic improvement.