

## *Projects finalized in the last 5 years*

**2008**

### **CEEX Programme**

1. *Multi-disciplinary researches on derivatives of adamantane as anti – Alzheimer compounds belonging to the class of N-metil-D-aspartate antagonists - MEMANTINA”, CEEX-VIASAN, contract 169/01.09.2006; INCDCF-ICCF project coordinator*

2. *Synthesis and biologic evaluation of new heterocyclic derivatives, potentially inhibitors of matrix metal proteinases; preparative researches and biological screening; CEEX-VIASAN, contract 170/09.2006; INCDCF-ICCF project coordinator*

3. *Researches on the synthesis and antibacterial activity of 4-quinolone-3-carboxylic acid derivatives; chemical structure – biological activity relationship, CEEX-VIASAN, contract 197/2006, INCDCF-ICCF project coordinator*

4. *Inter-disciplinary researches for the obtaining of new antimicrobial agents, physical-chemical characterization and biological activity testing in view of their valorization in anti-infective therapy, CEEX-VIASAN, contract 85/09.2006; INCDCF-ICCF partner*

5. *Use of radioactive isotopically labelled compounds in molecular biology, pharmacology and toxicology studies, CEEX-VIASAN, contract 36/2006; INCDCF-ICCF partner*

6. *Molecular chirality: determination of enantiomere excess and absolute configuration by NMR spectroscopy and application to bioactive compounds and intermediary compounds of fine synthesis, CEEX-CERES, contract 06-1130/2006; INCDCF-ICCF partner;*

7. *Nanostructured preparations with therapeutic action based on iridoid compounds isolated from indigenous plant species, CEEX VIASAN, contract nr. 177/09.2006; INCDCF-ICCF partner*

8. *Advanced technology for the treatment of peritoneal locations of abdominal-pelvis cancers by chemical hyperthermal intraperitoneal lavage, CEEX VIASAN, contract nr. 195/09.2006; INCDCF-ICCF partner;*

9. *Research and technological development platform for obtaining ecological insecticides, CEEX-BIOTECH, contract 144/2006; INCDCF-ICCF partner*

10. *Plant biomass used to obtain chemical substances and a phyto-therapeutic product with benefic activity on the nervous central system and technology transfer of product obtaining, CEEX BIOTECH, contract 3/2005, INCDCF-ICCF partner*

11. *Biotechnological products with complex bio-stimulating, bio-fertilizing and antagonist activity used in sustainable agriculture, CEEX-BIOTECH, contract 27/2005, INCDCF-ICCF partner*

12. *Biotechnologies based on fermentation processes and renewable raw materials for the obtaining of biodegradable polyesters with multiple applications, CEEX-BIOTECH, contract 59/2006; INCDCF-ICCF partner*

13. *Biosynthesis, chemical modification, analytical and immunological characterization of micro- and nano-structural polysaccharides useful as adjuvant compounds for new generations of vaccines, IMUNOBIOPOL, CEEX BIOTECH, contract nr.66/01.08.2006, INCDCF-ICCF project*

coordinator

14. *Biotechnological researches of monitoring the properties of some mineral springs to put them into account*, CEEX BIOTECH, contract 70/2006, INCDCF-ICCF project coordinator

15. *Adaptation and standardization of analytical methods according to EU directives for the quality control of biotechnological products useful in nutritional diseases and diet*, CEEX BIOTECH, contract nr. 26/10.10.2005, INCDCF-ICCF project coordinator

16. *Studies on the interference of plant natural complexes and drug pharmacokinetics – development of predictive models and therapy optimization*, CEEX BIOTECH, contract nr. 73/01.08.2006, INCDCF-ICCF project coordinator

17. *Procedure for obtaining bioactive concentrated and purified principles from indigenous medicinal plants – BIOCOMP*, CEEX BIOTECH, contract nr. 76/01.08.2006, INCDCF-ICCF partner

18. *Performing methods, correlated with EU requirements, for quality control of products obtained by extractive biotechnologies from plant biomass, useful for improvement of cerebral activity*, EUROBIOMET, CEEX BIOTECH, contract nr. 94/01.08.2006, INCDCF-ICCF project coordinator

19. *Technologies for obtaining chemical compounds from matured biomass of wine fermentation, useful in medicine industry, cosmetics and food additives*, CEEX BIOTECH, contract 33/2005; INCDCF-ICCF partner

20. *Multi-parametric investigation of food safety using analytical and toxicological methods*, CEEX AGRAL, contract nr. 6-1/03.10.2005; INCDCF-ICCF partner

21. *Controlled administration of drugs using nanostructures functionalized by advanced pulsed-laser techniques*, CEEX MATNANTECH, contract 60/2006, INCDCF-ICCF partner

22. *Integrated research network for nanomedicine*, CEEX MATNANTECH, contract 42/2005; INCDCF-ICCF partner

23. *Development of infrastructure of analytical research laboratory in view of control of impurities from drugs, according to EU directives*, CEEX Modul IV, contract nr. 200/10.08.2006, INCDCF-ICCF - project coordinator

24. *Development of analytical methods based on absorption spectrometry, required by EU Directives, applicable in quality control of drugs*, MODUL IV, contract no. 208/ 10.08.2006, INCDCF-ICCF - project coordinator

25. *New biocompatible nano-structural materials with directed properties and medical applications*, CEEX-VIASAN, contract 2530/2006; INCDCF-ICCF project coordinator

26. *Obtaining and characterization of a hypoglycemic products of plant origin*, CEEX-VIASAN, contract 2530/2006; INCDCF-ICCF - project coordinator

## **BIOMED - Core programme**

1. *Antihypertensive drugs, calcium-channel blockers; multi-disciplinary researches*

2. *Multi-disciplinary studies on benzimidazole derivatives as potential antimicrobial and*

## *anti-fungi agents*

3. *Studies on the obtaining of selective extracts of vegetal nature useful in prophylaxy and therapy of chronic fatigue syndrom*
4. *Studies on the obtaining of bioactive fractions from plants, useful for obesity control*
5. *Biotechnological studies on screening, selection and cultivation method at laboratory level, of some yeast strains useful for obtaining a bio-inorganic product containing zinc, copper and manganese, with therapeutic use*
6. *New natural inhibitors of enzymes mediating disease progression*
7. *Studies on the implementation of advanced methods of toxicological screening – pharmacoproteomics*
8. *Selection of cellulase producing microbial strains*
9. *Using of liposomes as vectors of antimicrobial agents – researches and applications*
10. *Modern methods for characterization and quality control of some natural products used in osteoporosis therapy*
11. *Non-clinical pharmacological assesment of some natural and synthetic compounds of potential use in anti-inflammatory therapy*
12. *Optimization of the method of assesment of anti-mutagenic activity of different plant extracts based on a microbial genotoxicity test (AMES test)*
13. *Studies on formulation of an enzymatic test for the determination of cholesterol in biological fluids*
14. *Biological control of bacterioses of culture plants in modern agriculture*
15. *Studies on the obtaining of an affinity support for purification of biological active compounds*
16. *Development of new methods of pharmacological investigations at cellular and molecular level based on high performance fluorescence techniques*
17. *Non-clinical studies for evaluation of potential anti-oxidant and anti-infective action of some volatile oils*
18. *Monitoring the hepato-toxic effects of hydro-alcoholic plant extracts of therapeutic use*
19. *Design and achievement of preparative norms for the implementation of a quality management system, specific for research units in the pharmaceutical biotechnology area*
20. *Physical-chemical characterization of some active substances of plant origin, useful for the improvement of cerebral activity*
21. *Selective biotransformation of some pro-chiral substances*
22. *Obtaining and identification of new flavonoid combinations with high biological potential*

**2007**

## **International Projects**

**1.** *Production and utilization of xylanases in the bioconversion of agricultural bx-products and wastes, 2006-2007, project in cooperation Romania - Hungary (Budapest University of Technology and Economics, Department of Agricultural Chemical Technology - ICCF)*

## **CEEX Programme**

1. *New structures with possible antidiabetic/antiobesity action from the beta-3-adrenergic receptors agonists class, multidisciplinary researches, CEEEX-VIASAN, contract 51/09.2005; INCDCF-ICCF project coordinator*

2. *Extending of the quality control system (ISO 17025) in the field of biochemical tests used in pharmacological studies on alternative models (in vitro, on animal cell cultures), CEEEX Modul IV, contract 70/07.09.2005, INCDCF-ICCF project coordinator*

3. *Accreditation of physico-chemical trials correlated with European Directives for drug therapeutical performance control, CEEEX-Modul IV, contract 59/07.09.2005, INCDCF-ICCF project coordinator*

## **2006**

### **VIASAN Programme**

1. *Modern antidiabetics in the beta-3-adrenoreceptors agonist class. Studies on synthesis, physical-chemical and pharmacological characterization, contract 374/05.10.2004, INCDCF-ICCF project coordinator*

2. *Multidisciplinary studies in the benzamides class for obtaining new compounds with potential antipsychotic action, contract 351/05.10.2004, INCDCF-ICCF project coordinator*

3. *Studies regarding the synthesis of some original agents active on Mycobacterium tuberculosis, contract 410/07.10.2004, INCDCF \_ICCF project coordinator*

4. *Cornea preservation media for tissue banks, contract 253/10.2004, INCDCF-ICCF project coordinator*

5. *Obtaining of a new generation of biopreparates of Plantago sp. for use in human therapy, contract 329/10.2004, INCDCF-ICCF partner*

### **RELANSIN Programme**

1. *Technologies for the use of a biosynthesis polysaccharide, of Romanian production, for the establishing and directing the biodisponibility of certain pharmaceutical forms as nutritional supplements, contract 2050/30.09.2004; INCDCF-ICCF project coordinator*

2. *Use of ionizant radiation treatment for improving the manufacturing technology and promotion of new products for pharmaceutical and medical use, TRADION, contract 1905/2004, INCDCF-ICCF partner*

### **BIOTECH Programme**

1. *Obtaining a cosmetic products range using a polysaccharide with nutritional and pellicular action, achieved in Romania, in association with phytotherapeutical extracts, contract 4722/15.10.2004; INCDCF-ICCF project coordinator*

2. *Performant biotechnology to obtain biogas, contract 4721/ 15.10.2004; INCDCF-ICCF*

project coordinator

3. *Preparation technologies for fresh medicinal plant juices, stabilization and standardization in order to obtain new, highly efficient phytoterapeutic products*, contract 4742/sept.2004; INCDCF-ICCF project coordinator

4. *Evaluation and valorization of anti-mutagenic potential of plant antioxidants GENPROD*, contract 4740/29.11.2004, INCDCF-ICCF project coordinator

5. *Chitosan, preparation biotechnologies, antimicrobial potential optimization and application in the food and chemical-pharmaceutical fields*, contract 4741/15.10.2004, INCDCF-ICCF project coordinator

6. *Studies of obtaining a pharmaceutical preparation based on yeast enriched in organic chromium, useful in human and veterinary therapy*, contract 4671/15.10.2004; INCDCF-ICCF project coordinator

7. *Xylanase- obtaining technology by bacterial biosynthesis from plant wastes*, contract 4544/2004; INCDCF-ICCF project coordinator

8. *Technology regarding the obtainment of active principles from Herba violae tricoloris useful in treatment of allergies of different etiologies*, contract 4738/2004, INCDCF-ICCF project coordinator

9. *Studies of obtaining a pharmaceutical preparation based on yeast enriched in organic selenium, with antioxidant action, useful in human and veterinary therapy*, contract 4672/2004; INCDCF-ICCF project coordinator

10. *Mediators of chemical compounds immunotoxicity – molecular targets of some bioactive natural extracts, selection of new products with performances in prevention and therapy*, contract 4743/2004, INCDCF-ICCF project coordinator

11. *Methodology for obtaining by “in silico” and “in vitro” modellation of a plant bioactive product, with superior biodisponibility properties for the treatment of ulcerative colitis in humans*, contract 4588/15/10/2004, INCDCF-ICCF partner

12. *Using wastes and subproducts from beer industry (Saccharomyces cerevisiae yeast and must malt) for the obtainment of biological active food supplements*, contract 4748/15.10.2004, INCDCF-ICCF project coordinator

### **INFRAS Programme**

1. *Implementation of ISO 170125 QMS for biochemical and hematological tests used in pharmaco-toxicological studies for dangerous chemical substances and products*, contract 251/17.11.2004, INCDCF-ICCF project coordinator

### **MATNANTECH Programme**

1. *Tri-hydroxy-apatite composite obtained through electrophoresis for medical application, COTIMED*, contract 4128, INCDCF-ICCF partner

### **CERES Programme**

1. *Biopolymers nano-structured coatings obtained through pulsed laser evaporation, assisted by a matrix for pharmaceutical industry applications*, contract 4178/15.11.2004, INCDCF - ICCF partner

## 2005

### Core Programme BIOSIN

1. *Studies of protease-inhibitors with possible therapeutic applications*, project code 03-28 02 01

2. *Strategies for obtaining of active compounds and intermediates by semi-synthesis using flavonoid active compounds in hydroxyethylation reaction*, project code PN 03-28 02 03

3. *Researches regarding the Avena Sativa species for the obtainment of some potentially sedative fractions*, project code PN 03-28 01 03

4. *Obtaining a phytotherapeutical complex with applications in the treatment of varicose ulcer and of other skin ulcerative diseases*, project code PN 03-28 01 02

5. *Adapting pharmacological tests and perfectioning the staff for the implemetation of GLP standards in the area of pharmaco-toxicology tests*, project code PN 03-28 03 01

6. *Microbial pigments with antimicrobial and antioxidantive action*, project code PN 03-28 01 04

7. *Studies concerning to the possibility of using microbial specia from our own collection of industrial microorganisms (CMII-WFCC 232) to cyanide degradation*, project code PN 03-28 01 05

8. *Obtaining of some microbial ecological probiotics useful in the human and veterinary fields*, project code PN 03-28 01 06

9. *Researches on the obtainment of some fractions for external use, with hemostatic, antimirobian and antiinflammatory properties*, project code PN 03-28 01 07

10. *Studies to achieve modern transport and controlled-release systems of liposome-type*, project code PN 03-28 02 04

11. *Identifying astaxantin to obtain and turn to account this carotenoid compound in pharmaceuticals, food and cosmetics*, project code PN 03-28 01 08

12. *Biotechnological studies regarding the obtainment of calcium gluconate in submerged cultures of Aspergillus niger, useful in human and veterinary therapy*, project code PN 03-28 02 09

13. *Separation of fatty acids from fish oil through complexation with beta-ciclodextrine*, project code PN 03-28 01 10

14. *Enzymes with therapeutic and nutritional application*, project code PN 03-28 01 01

15. *Nicotine derivatives with anti-parasitic effects*, project code PN 03-28 02 06

16. *Studies of enhancing therapeutic action of some active principles by hyaluronic compounds*, project code PN 03-28 02 03

17. *Studies concerning extraction, separation and identification of active flavonoid principles from medicinal plants*, project code PN 03-28 02 07

18. *Activities regarding the accreditation of the CMII-WFCC 232 microorganisms collection*

as National Authority for the microorganisms depository, undergoing the patenting procedure, according to the Budapest Treaty, project code PN 03-28 03 02

19. *Development of some evaluation methods for the quality of natural products using modern chromatographical techniques, according to international standards and GMP regulations, in view of EU integration, project code PN 03-28 02 05*

### **VIASAN Programme**

1. *Researches regarding the obtainment through synthesis of new antiinfectious agents: antibacterial and antiviral, as well as aspects concerning their biologic effects, contract 174/22.10.2002, INCDCF-ICCF partner*

2. *Studies concerning the bacteria presently involved in the nosocomial infections producing, determining their resistance to antibiotics and identifying the most efficient therapeutic schemes, contract 232/22.07.2003, INCDCF-ICCF partner*

3. *Modern non-steroidic anti-inflammatory compounds of COX-2 selective inhibitors, contract 239/24.07.2003, INCDCF-ICCF project coordinator*

4. *Development, validation and application of alternative (in vitro) models for toxicological testing for pharmaceutical, cosmetical and biomedical products, contract 193/14.10.2002, INCDCF-ICCF project coordinator*

5. *Evaluation of the human toxicologic risk generated by some widely used pesticides, identification of biomarkers applicable in compound monitoring, contract 252/2003, INCDCF-ICCF project coordinator*

### **BIOTECH Programme**

1. *Veterinary medicines of prostaglandin hormones class, contract 3373/01.10.2003, INCDCF-ICCF partner*

2. *Bank of swine tissue conservation for human xenotransplant, contract 495/01.10.2002, INCDCF-ICCF partner*

3. *Organizing culture collections as banks of microbial resources assisted by data bases on specific activities, ensuring the quality authenticity and genetic information unchanged by methods for long time preservation in order to render them available for scientific and biotechnological use; informative UE integration, contract 3381/01.10.2003, INCDCF-ICCF partner*

4. *Enhancing biodegradability and bioavailability of natural and synthetic polymers by irradiation; conversion to carbon sources for microbial biotechnology, contract 3382/01.10.2003*

5. *Enhancing the use value of plant wastes (grape seeds and peels and seeds delipidized by night light) through an product antioxidant active, contract 468/01.10.2003, INCDCF-ICCF project coordinator*

6. *Technology of obtaining an active product for symptomatic treatment of respiratory virosis, contract 372, INCDCF-ICCF partner*

7. *Studies of obtaining a plant extraction bioactive product for intestinal inflammatory*

diseases, contract 3326/2003, INCDCF-ICCF partner

8. *Pilot level technology of obtaining a phytotherapeutic product active on teguments and mucous membranes*, contract 3353/01.10.2003, INCDCF-ICCF partner

9. *Research of transgenic varieties of mulberry tree (Morus alba) to obtain a pharmacologically active product*, contract 3342/2003, INCDCF-ICCF partner

10. *New methods based on advanced analytical techniques for control and quality assurance of active substances and products resulted from biotechnologies*, contract 3325/2003, INCDCF-ICCF partner

11. *Biotechnological studies for the development of an implantable device for controlled release of drugs, MEDIMPLANT*, contract 3383/31.10.2003, INCDCF-ICCF project coordinator

12. *Development of a methodology for obtaining biomass of biotechnologic interest through "in vitro" cultures and artificial re-synthesis of biochemical tals, LICBIOFARM*, contract 3322/2003, INCDCF-ICCF partner

13. *Studies regarding a clinical enzymatic test for the determination of glutamic pyruvic transaminase TGP*, contract 3370/17.10.2003

### **MATNANTECH Programme**

1. *Obtainment technology for nanostructured silicium membranes for a pharmaceutical device FARMEC*, contract 183/2003, INCDCF-ICCF partner

2. *Integrated system of silicon microreservoirs for the controlled delivery of drugs, DESIRE*, contract 165/2003, INCDCF-ICCF partner

3. *Biomimetic microdevice for the handling and study of cells found under the influence of pollution and oxidative stress*, contract 178/2003, INCDCF-ICCF partner

4. *Advanced technology for the synthesis and processing of biocompatible nanocomposite powders, BIONANOCOM*, contract 138/2003, INCDCF-ICCF partner

5. *Obtaining and preclinical testing of some alloys for their use in dental restaurauration NANOCERAMOTI*, contract 124/2002, INCDCF-ICCF partner

6. *Advaced metallic materials, biocompatible, with medical applications*, contract 951/25.09.2002, INCDCF-ICCF partner

### **CERES Programme**

1. *Action of ionizing radiations on physiotherapeutical preparates for microbiological decontamination, DECOFIT*, contract 344/2003, INCDCF-ICCF partner

2. *Interdisciplinary researches in the 1,4-dihydropyridine class for the obtainment of original compounds with biological activity in artherial hypertension by calcium flow regulation*, contract 391/11.11.2003, INCDCF-ICCF partner

### **INFRAS Programme**

1. *Transposing and applying EU principles and practices in the area of medicines quality*

control, contract 192/06.11.2003, INCDCF-ICCF partner

## 2004

### International Projects

**1. FP5 Programme:** *Interactive European network for industrial crops and their application in the changing millennium – IENICA* (Project Coordinator: Central Science Lab., Sand Hutton, U.K.); INCDCF – ICCF partner in the 28 member network

**2. COST Programme:**

**COST Action D 28:** *Natural products – source for discovery, synthesis and obtainment of new medicines*

**COST Action D 12:** *Organic transformations: selective processes and assymmetric catalysis*

**3. Romania - Greece cooperation project:** *„Protein Engineering of L-Asparaginase for the Improvement of its Pharmacological Properties”*(Agricultural Univ. of Athens - Dept of Agricultural Biotechnology - Lab. of Enzyme Technology- Iccf), 2003 – 2004

### BIOTECH Programme

1. *Industrial biosynthesis, isolation and purification of a pullulan polysaccharide and the obtainment of its derivatives with biomedical uses*, contract 084/19.10.2001, INCDCF-ICCF project coordinator

2. *Modelling, testing and optimizing some cytoprotective preparates based on natural compounds with antioxidant activity*, contract 128/19.10.2001. INCDCF-ICCF project coordinator

3. *Biotransformation of some steroidal hormones with microorganisms producing monooxygenases*, contract 065/19.10.2001, INCDCF-ICCF project coordinator

4. *Researches regarding the obtainment and testing of a biological active natural product with insecticide potential*, contract 085/17.10.2001; INCDCF-ICCF project coordinator

5. *Researches regarding microbial fytase: biosynthesis, isolation and purification*, contract 093/19.10.2001; INCDCF-ICCF project coordinator

6. *Biotechnological researches regarding the obtainment of seleniated yeast products, for human and veterinary use*, contract 022/19.10.2001, INCDCF-ICCF project coordinator

7. *Biotechnological researches regarding the obtainment of microbial poly-beta-hydroxybutirate with therapeutic applications*, contract 021/19.10.2001, INCDCF-ICCF project coordinator

8. *Biotechnological researches regarding the remedy of the areas of chemical -pharmaceutical industry units exposed to risk of pollution with synthesis substances*, contract 024/19.10.2001, INCDCF-ICCF project coordinator

9. *Biotechnology for purifying waste waters with heavy metals content*, contract 492/2002, INCDCF-ICCF partner

10. *Bringing up to date the technological research and development strategy in the area of biotechnology for the integration in the European research space*, contract 3-455/21.10.2003, INCDCF-ICCF partner

11. *Technology, including manufacturing installation, for a plant drug product useful in the treatment of colon diseases*, contract 101/19.10.2001, INCDCF-ICCF project coordinator

12. *Technology for the obtainment of a antiulcerous drug plant product*, contract 469/01.10.2002, INCDCF-ICCF project coordinator

13. *Biotechnologies for the enhanced use of industrial wastes from antibiotic manufacturing for the obtainment of fertilizers*, contract 063/01.10.2001, INCDCF-ICCF partner

### **MATNANTECH Programme**

1. *Performant magnetic materials: spinelic and granat structure ferrites*, contract 19/2001, INCDCF-ICCF partner

2. *Research laboratories network in the field of micro- and nano- bio-engineering, BIONANONET*, contract 68/2001, INCDCF-ICCF partner

3. *Nanobiotechnology research center, CENOBITE*, contract 94/2002, INCDCF-ICCF partner

### **VIASAN Programme**

1. *Studies for the obtainment of an enzymatic clinical test for the determining of glutamic-oxalic transaminase (GOT)*, contract 104/29.10.2001, INCDCF-ICCF project coordinator

2. *Radicalic compositions and procedure for the treatment of psoriasis*, contract 264/15.10.2003, INCDCF-ICCF partner

### **RELANSIN Programme**

1. *Reaserches regarding the achievement and certification of biocompatible alloys for dental protection*, contract 1528/2002, INCDCF-ICCF partner

2. *New generation of biomaterials as replacements for soft and semi-rigide tisseeues*, contract 1718/2003, INCDCF-ICCF partner

3. *Achievement of new types of dental implants made of titanium based biomaterials*, contract 1695/2003, INCDCF-ICCF partner