Basic Facts

Project prepared by: Academy of Sciences of the Czech Republic and Charles University in Prague
Locality: Vestec, Central Bohemia, Czech Republic
Total surface area: 25 500 m²
Construction commencement: early 2012
Start of recruitment process for researchers and scientists: 2012
Start of operation: 2013
Number of employees: 600
Students: 250 Master and PhD
European infrastructures membership:
EURO-BIOIMAGING – focuses on cell research using advanced techniques of electron and light microscopy and development of imaging techniques in biomedicine. As part of the pan-European consortium, BIOCEV will coordinate and organize various teaching activities on imaging and European access to the top imaging technology.
INFRAFRONTIER – BIOCEV centre for phenogenomics will participate in gene research along with other top world centres of functional genomics. Participation in the scientific programme of Infrafrontier will enable all Czech scientists to move to the front line of basic and applied research in genetics and biomedicine.
INSTRUCT – aims to provide researchers with access to state-of-the-art structural biology technologies and to stimulate and facilitate research that integrates the understanding of biological structure with cellular functions. BIOCEV facility for structural biology will operate as an affiliated centre of INSTRUCT.

Funding

Operational Programme Research and Development for Innovation 2007–2013 (European Regional Development Fund)
Estimated total expenditure: 133 mil. EUR
Estimated EU funding: 90 mil. EUR

Regional Impacts

The Centre will be built in the Central Bohemia region. This means:
- creation of new working opportunities in the region
- completion and higher efficiency of social and transportation infrastructure in the region
- improvement of the economic potential of Central Bohemia and Czech Republic
- improvement of competitiveness of the Czech Republic

Applicant

Institute of Molecular Genetics AS CR, v. v. i.
www.img.cas.cz

Project Partners

Charles University in Prague
Faculty of Science
www.natur.cuni.cz
First Faculty of Medicine
www.lf1.cuni.cz

Academy of Sciences of the Czech Republic
Institute of Biotechnology ASCR, v. v. i.
www.ibt.cas.cz
Institute of Physiology ASCR, v. v. i.
www.fgu.biomed.cas.cz
Institute of Microbiology, v. v. i.
www.biomed.cas.cz/mbu
Institute of Experimental Medicine ASCR, v. v. i.
www.iem.cas.cz
Institute of Macromolecular Chemistry ASCR, v. v. i.
www.imc.cas.cz

BIOTECHNOLOGY AND BIOMEDICINE CENTRE OF THE ACADEMY OF SCIENCES AND CHARLES UNIVERSITY IN VESTEC

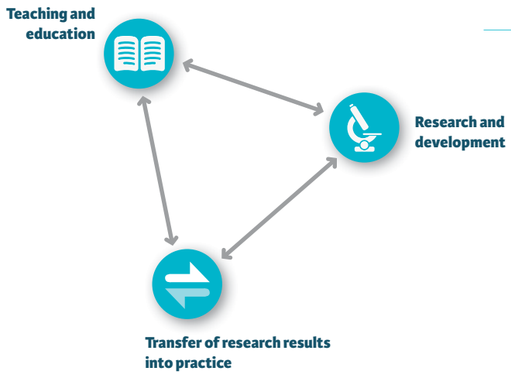
Biocev Project

The Academy of Sciences of the Czech Republic and Charles University in Prague have joined forces to develop the European Centre of Excellence in the field of life sciences. By 2015, when fully operating, centre BIOCEV will offer state-of-the-art core facilities, contractual research, education and training programmes for students and business specialists and over 400 employment opportunities for scientists from all over the world. All of its five research programmes are being developed by the most prominent scientists from the Czech Republic and abroad.

Project Vision

Our vision is to establish a centre of excellence as part of the European Research Area and to guarantee development of modern biotechnologies and biomedicine in favour of scientific progress and modern society.

The uniqueness of the project lies in well-balanced activities and goals set within the pillars of the knowledge triangle, in BIOCEV supported by modern infrastructure and novel approaches to conducting research, which are based on the experience of top-quality world research institutes.



Scientific Programme

Our scientific programme is focused on the key challenges and latest trends in biotechnology and biomedicine research. High complementarity and synergy of all parts of the research concept of BIOCEV are the guarantee that BIOCEV will become a significant crossroads of science in the heart of Europe, with considerable potential impact on human knowledge and its transfer into practical life, and on essential areas of human life such as health or environment. The quality of five research programmes stems from the intellectual potential and originality of the strictly selected research teams as well as the establishment of the state-of-the-art core facilities.

1. Functional genomics – characterization of the complex gene functions including their interaction, namely focused on the molecular mechanisms of diseases
2. Cell biology and virology – interplay between cancer and viral infections, regulation mechanisms of transformed and stem cells and mechanisms of host-pathogen interactions
3. Structural biology and protein engineering – development and production of recombinant proteins with practical utilization (e.g. preparation of drugs targeted to pathologically affected regions of the organism)
4. Biomaterials and tissue engineering – development of synthetic polymer therapeutics and diagnostic tools and development of polymer materials for tissue replacement in regenerative medicine
5. Development of therapeutic and diagnostic approaches – study of the molecular mechanisms of diseases aimed at the improvement of diagnostics and gaining knowledge that could be used in further studies of treatment modalities

Core Facilities

Implementation of the complex projects requires cutting-edge technologies, which will be concentrated in the following centres:

- **Czech Centre for Phenogenomics** – centre for functional analysis of individual genes
- **Centre for Molecular Structure** – crystallography and mass spectrometry
- **Imaging Methods** – microscopic techniques including confocal and electron microscopy
- **OMICS** – DNA sequencing and characterization including microchip and proteomic analysis
- **Cryotechnologies** – fully computerised storage for cell lines, mouse sperm, and embryos in liquid nitrogen or nitrogen vapour

Transfer of research results into practice

- support of transfer of basic research results into practice, namely in human and veterinary medicine
- intensive cooperation with the commercial sphere
- support of preservation of intellectual property and its further utilization (establishment of a special department for transfer of technologies whose aim will be both to preserve the research results of BIOCEV scientists and to maximize their socioeconomic contribution)

Research and development

- common project of leading scientific institutions in the Czech Republic with research programmes led by the most prominent scientists
- focus on recently fast developing biotechnology and biomedicine branches with worldwide impact
- establishment of a centre with complex research technologies
- integration into the European Research Area

Teaching and education

- education of Master and PhD students in a stimulating environment of leading scientific teams of the Academy of Sciences and Charles University
- development of new study specializations
- education of professionals in the business sphere
- popularization of the areas of biotechnology and biomedicine and their promotion in the media

Contacts

PROJECT DIRECTOR
Jan Rajnoch, MD
E-mail: jan.rajnoch@img.cas.cz
Tel.: +420 226 201 526
Mobile: +420 774 798 120

BIOCEV
Nad Safinou II 366
252 42 Vestec, Czech Republic
E-mail: biocev@biocev.eu

SCIENTIFIC COORDINATOR
Prof. Václav Pačes, DSc
E-mail: vaclav.paces@img.cas.cz
Tel.: +420 241 063 541

PROJECT APPLICANT
Institute of Molecular Genetics of the ASCR, v. v. i.
Director: Prof. Václav Hořejší, PhD
E-mail: vaclav.horejsi@img.cas.cz
Tel.: +420 241 062 465

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