



Institute of Experimental Medicine Academy of Sciences of the Czech Republic

The Institute of Experimental Medicine of the Academy of Sciences of the Czech Republic (IEM AS CR) is the nation's leading institution for biomedical research, addressing topics across a wide spectrum of **domains such as:**

1. **Neurosciences (Neurobiology, Neurophysiology, Neuropathology)**
2. **Stem Cells and Tissue Engineering**
3. **Regenerative Medicine**
4. **Genetic Ecotoxicology**
5. **Cancer Research**

The Institute is an internationally recognized center in these fields, and as such it was selected as an EU Center of Excellence (MEDIPRA).

Research teams of the Institute have participated in the main European Framework Programs FP6 & FP7 as well as the forthcoming H2020 initiative, joining international consortia and research projects and creating extensive collaborations on both national and international levels. Many strong relationships have been established between the scientists of the Institute and their colleagues in Europe, North America, Asia and Australia. On a national level, the IEM collaborates with Czech Universities (Charles University's in Prague and the Faculty of Natural Sciences of Mendel University in Brno), the Institute for Clinical and Experimental Medicine (IKEM) of the Ministry of Health, the Regional Institute for Hygiene of Central Bohemia, the Institute of Macromolecular Chemistry, and the other institutes of AS CR.

A number of foreign senior scientists and postdoctoral fellows, are working in various departments in the Institute, as are both Czech and foreign Ph.D. students, who are funded by EU grants as well as by the Institute's core budget. The Institute supports young group leaders and is a partner in the EU project ENI-NET, bringing together leading European institutes in the field of neuroscience; it has the highest percentage of Ph.D. students among all the institutes of the Academy of Sciences.

The outcomes of the **Institute's research**, which have already been applied in practice, include those in the fields of **Neuroscience, Regenerative medicine, Pharmacology, Environmental protection, and Diagnostic methods.**

The publication activity of the Institute is constantly growing; its research has appeared in numerous high impact peer reviewed journals including *Nature, Physiological Reviews, Cell, Trends in Neuroscience, Trends in Pharmacology, The Journal of Cell Biology, Journal of Physiology, Journal of Cell Science, Stem Cell Research, Molecular Pharmacology, Biophysical Journal* and more.



The Institute regularly organizes International events (workshops, symposia and conferences as well as summer schools for young researchers).

The Institute was officially founded in 1975 and established under the auspices of the Czechoslovak Academy of Sciences. Since the beginning it has contributed significantly to the international recognition of Czechoslovak medical research. **In 2001 Professor Eva Syková was appointed as director.** The Institute of Experimental Medicine belongs to the biomedical group of research institutes of the Academy of Sciences of the Czech Republic and is the only institute in the Czech Republic engaged in a comprehensive medical research program encompassing a number of diverse fields.



**Institute
of Experimental
Medicine AS CR, v.v.i.**

EU Centre of Excellence

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Organizational Structure and Research Activities

The Institute comprises the Following
Departments and Laboratories

1. **Dpt. of Neuroscience**
 - 1.1. Laboratory of Diffusion Studies and Imaging Methods
 - 1.2. Laboratory of Tissue Culture and Stem Cells
 - 1.3. Laboratory of biomaterials and biophysical methods
 - 1.4. Laboratory of Eye Histochemistry and Pharmacology
2. **Dpt. of Auditory Neuroscience**
 - 2.1. Laboratory of Auditory Physiology and Pathology
 - 2.2. Laboratory of Synaptic Physiology
3. **Dpt. of Cellular Neurophysiology**
4. **Dpt. of Molecular Neurophysiology**
5. **Dpt. of Pharmacology**
6. **Dpt. of Genetic Ecotoxicology**
 - 6.1. Laboratory of Molecular Epidemiology
 - 6.2. Laboratory of Genetic Toxicology
 - 6.3. Laboratory of Genomics
7. **Dpt. of Teratology**
 - 7.1. Laboratory of Embryogenesis
 - 7.2. Laboratory of Ontogenesis
8. **Dpt. of Molecular Biology of Cancer**
 - 8.1. Laboratory of the Genetics of Cancer
 - 8.2. Laboratory of DNA Repair
9. **Dpt. of Transplantation Immunology**
10. **Dpt. of Tissue Engineering**
11. **Microscopy Unit**
12. **Dpt. of Technology Transfer**
This department advances innovation into the phase of applied research and converts it into outputs of high commercial value (products and services). This process is optimized thanks to extensive networking and partnership with research units, the biotech industry and entrepreneurs.
13. **Innovation Biomedical Center**
14. **Research Center for Cell Therapy & Tissue Repair**

Entrepreneurial Activities

Aside from conducting top level research and achieving Technology Transfer, the Institute:

Manages the Innovation Biomedical Center

This facility promotes the use of the technology developed by the Institute to benefit the Institute through licensing inventions to spin-off companies capable of successfully commercializing them. It supports the research mission of the Institute by finding industrial partners for spin-off firms, sponsoring research and generating licensing income that aids future research. The IBC helps move technologies from the IEM's laboratories to the marketplace by

developing and managing an array of partnerships with the private sector. These inventions are evaluated, and intellectual property protection (patents or copyright) is sought. Collaborative research with industry may further develop the technology, which may then be promoted and licensed. The Innovation Biomedical Center has three components:

- It supports competitiveness in the biomedical field
- It is a center for applied research in biomedicine
- It acts as a business incubator for spin off companies

More informations

Coordinates the foundation Cell Therapy:

The Cell Therapy Foundation was created in November 2003, and its mission is to promote the development of science and research in the field of regenerative medicine and support patients and health care facilities in the application of treatment with cell therapy, tissue repair. To this end, the Foundation promotes science and research in the field of regenerative medicine by:

- Supporting individuals and healthcare facilities in the application of cell therapy treatment

- Purchasing specialized equipment, medical substances and materials needed for the continuation of research in laboratories
- Contributing to greater public awareness through leaflets, brochures and articles and providing information on new research results
- Working long term with professional organizations involved in research and the application of medical science.



www.bunecnaterapie.cz

Holds the majority of the shares in the company Bioinova, Ltd.

Bioinova specializes in the development of cellular therapies for the treatment of diseases that affect tens of millions of people around the world. The main areas of business activity is focused on the development of advanced therapy medicinal products based on mesenchymal stromal cells for the needs of clinical trials. It implements practical technology transfer from basic research to applied research, leading to a place on the medical market.

Bioinova has a production capacity of aseptic processes (class A / B) and an international team of qualified professionals specializing in the preparation of production processes and clinical studies. The company is a certified manufacturer of aseptic products, and carries out somatic cell therapy according to Good Manufacturing Practice (GMP) standards.

Bioinova focuses on autologous stem cells obtained from bone marrow and fat tissue of treated patients.

The treatment is designed to initiate and propagate healing processes which help restore damaged tissue. Processing and cultivation is carried out in certified cleanroom conditions based on GMP and using the latest technologies ensuring the highest quality stem cell therapy.

Regenerative medicine will in effect be able to replace, repair or improve the function of damaged tissue or organs and is a major hope for the treatment of many diseases.

www.bioinova.cz



Founded the Research Center for Cell Therapy & Tissue Repair

The project "Research Centre for Cell Therapy and Tissue Repair" is financed by the European Regional Development Fund (ERDF) through the Prague Competitiveness Operational Program and the State Budget of the Czech Republic.

Through the implementation of the project the Institute built new infrastructure – a modern center focused on research in the field of advanced therapy medicinal products, nanotechnology in medical practice and in the areas of safety, efficiency and effectiveness of the above two interdisciplinary fields.

The project aims to improve the innovation infrastructure in Prague, enabling a higher potential for research and development by strengthening the cooperation between the two areas and improving their practical application in direct relation to small and medium-sized enterprises.

The Institute is also a member of numerous European and international platforms aiming to bridge scientific achievements with business and commercialization.

More informations

