

Life Sciences

Just one example of the state-of-the-art research facilities in the Czech Republic is the Institute of Organic Chemistry and Biochemistry of the Academy of Sciences of the Czech Republic. Results of antiviral research conducted by Prof. Antonín Holý led to the discovery of antiviral compounds derived from nucleotides and nucleosides. Three of the compounds are used by Gilead Sciences for treating AIDS (Viread, tenofovir), cytomegalovirus retinitis (Vistide, cidofovir,) and hepatitis B (Hepsera, adefovir). They have given thousands of patients worldwide a chance for a better and longer life.



BASIC FACTS

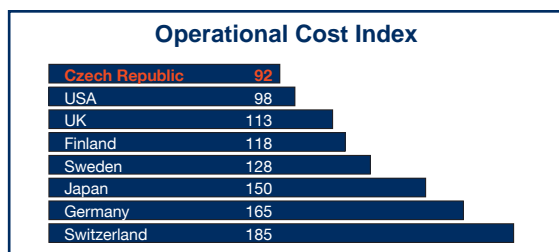
From the country that laid down the principal laws of heredity, introduced the contact lens to the world and successfully developed the compounds on which current anti-AIDS drugs are based, the Czech Republic is an attractive location for contract R&D and manufacturing. Around 40% of foreign direct investment in the Czech Republic in 2012 comprised technology-oriented projects with a large share of R&D activities within innovative industries. This trend is set to continue given that one of the government's policy goals is to accelerate the transfer of knowledge between the science and business communities. Development of the life sciences sector is supported by effective patent protection, adoption of GMP, GLP and GCP standards, public support for R&D and relatively non-restrictive genetic-engineering policies. Examples of global companies conducting business, R&D and/or manufacturing in the Czech Republic include TEVA Pharmaceuticals, Lonza Biotec, Baxter International, Otsuka Pharmaceuticals, Sanofi Aventis, Beckman Coulter and Zentiva, among others.

SKILLS AND EDUCATION

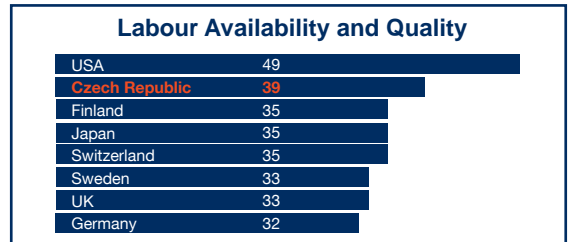
The success of companies operating in the life sciences sector stems from a long track record in research and development and the quality of education in the Czech Republic. More than 49,000 students were enrolled in life sciences study programmes at natural sciences faculties of Czech universities, including Charles University, which was established in 1348 and is one of Europe's oldest universities. Highly skilled graduates available at competitive cost are just one of the reasons to consider the Czech Republic as a potential location for investment in the life sciences sector.

COMPETITIVE BENCHMARKING

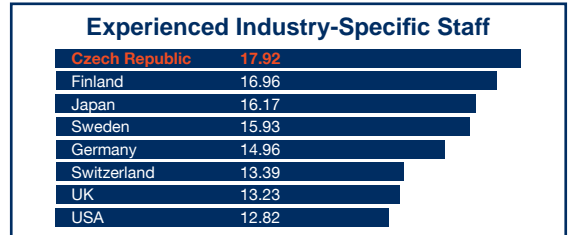
The following three charts show that while companies can achieve substantial savings in operational costs, the quality and availability of experienced industry-specific staff in the Czech Republic are among the highest in the selected markets.



Source: Financial Times, fDi Benchmark 2013



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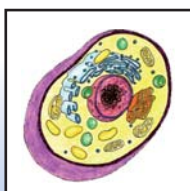
Source: Financial Times, fDi Benchmark 2013

REASONS TO INVEST IN THE CZECH REPUBLIC

- World-class academic community and strong research base with outstanding results in basic and applied research
- Close ties between universities, research, industry and the public healthcare system
- Availability of university graduates and laboratory technicians at competitive cost
- Regulatory and patent environment harmonious with that of the EU
- Strong presence of large international pharmaceutical companies participating in research programmes
- Network of life-sciences clusters and professional services

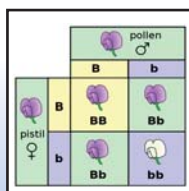
IF R&D IS WHAT YOU ARE LOOKING FOR

The Czech Republic is home to a number of noteworthy research institutes and universities recognised for their high quality research in neuroscience, molecular genetics, oncology, immunology, pharmaceutical chemistry, diabetes and metabolic diseases. The Czech government set research and development in molecular genetics and biotechnology among its priority areas in the long-term fundamental direction of research and used substantial public funding to strengthen the country's research infrastructure in this field. New, state-of-the-art research facilities have been completed in Brno (ICRC) and Olomouc (IMTM). Two more facilities are being constructed in Prague (BIOCEV) and Brno (CEITEC) to complement current research institutes of the Academy of Sciences of the Czech Republic.



1837

Jan Evangelista Purkyně formulates the cell theory



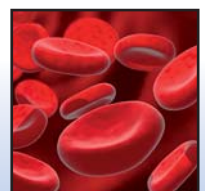
1866

Johan Gregor Mendel discovers the principal laws of heredity



1896

Neurologist Sigmund Freud pioneers the field of psychoanalysis



1907

Jan Jánský discovers the fourth blood type



BIOCEV

Biotechnology and Biomedicine Centre of the Academy of Sciences and Charles University in Vestec

BIOCEV – BIOTECHNOLOGY AND BIOMEDICINE CENTRE OF THE ACADEMY OF SCIENCES AND CHARLES UNIVERSITY IN PRAGUE

www.biocev.eu

BIOCEV is a joint project involving six institutes of the Academy of Sciences of the Czech Republic and two faculties of Charles University in Prague with the goal of establishing a scientific centre of excellence in the fields of biotechnology and bio-medicine. The centre will provide respected scientists with facilities for innovative research, create conditions for excellent scientific achievement in the Czech Republic, and support growth of the biotechnology industry at the national and European levels.

The scientific programme involves five synergistic fields of biomedicine and biotechnology research within which the basic research goals include detailed study of cellular mechanisms at the molecular level inspiring applied research and leading to the development of new therapeutic strategies. These include early diagnostics, development of biologically active agents including chemotherapeutics, protein engineering and other innovative technologies.



CEITEC – CENTRAL EUROPEAN INSTITUTE OF TECHNOLOGY IN BRNO

www.ceitec.eu

Built on the strong research background of Brno's universities, the multi-field CEITEC is a unique combination of life and material sciences. The core of the institute consists of seven research programmes (Advanced Nanotechnology and Microtechnology, Advanced Materials, Structural Biology, Genomics and Proteomics of Plant Systems, Molecular Medicine, Neuroscience and Molecular Veterinary Medicine), bringing together 64 research groups specialising in specific, progressive scientific fields and disciplines. The institute generates multiple synergies, particularly interaction between programmes addressing multi-disciplinary issues.

CEITEC's aim is to establish itself as a prestigious European centre of science with state-of-the-art infrastructure and conditions in place to attract the best researchers.



INTERNATIONAL CLINICAL RESEARCH CENTRE IN BRNO

www.fnusa-icrc.org

The International Clinical Research Centre (ICRC) is an integral part of St. Anne's University Hospital in Brno, hence the acronym FNUSA-ICRC. It is the result of long-term close cooperation between experts from St. Anne's University Hospital in Brno and Mayo Clinic in Rochester, Minnesota (USA). FNUSA-ICRC is a science and research centre as well as a top-quality public healthcare centre focusing on prevention, early detection and treatment primarily of cardiovascular and neurological diseases. FNUSA-ICRC, co-financed from EU funds, combines the following elements:

- an innovative international research and development centre, a European Centre of Excellence
- an international educational centre disseminating the latest knowledge in healthcare
- a state-of-the-art centre for public health care providing clinical, therapeutic and preventive care in the areas of cardiovascular medicine and neuroscience
- a technology cluster for companies collaborating in research and development



INSTITUTE OF MOLECULAR AND TRANSLATIONAL MEDICINE

INSTITUTE OF MOLECULAR AND TRANSLATIONAL MEDICINE OF PALACKÝ UNIVERSITY IN OLMOUČ

www.imtm.cz

The recently established Institute of Molecular and Translational Medicine (IMTM), Faculty of Medicine and Dentistry at Palacký University in Olomouc is one of the most influential research projects carried out in the country. IMTM's mission is translational research with the goal of understanding the underlying causes of human diseases and developing future treatments and diagnostics.

Research programmes focus on the molecular basis of diseases and molecular targets; medicinal chemistry; chemical biology and experimental therapeutics; biomarkers identification and validation; pharmacology and toxicology; and translational medicine (proof-of-concept clinical trials). IMTM's core facilities include Bioinformatics and Biostatistics, Animal Models and Imaging, Genomics, Proteomics, Metabolomics, Cell Biology, Medicinal Chemistry, Radiochemistry, uHTS/HCA Screening Platform.



1959

Jaroslav Heyrovský wins the Nobel Prize for polarography



1961

Otto Wichterle produces the first soft gel contact lenses



2002

FDA approves the anti-AIDS and hepatitis B drugs developed by Prof. Antonín Holy



2012 +

IMTM Olomouc one of the new world-class research institutes

COMPANIES MAP – PHARMA AND BIOTECH



NATIONAL BIOMEDICAL AND BIOTECHNOLOGY PARK IN OLOMOUC

www.nbbp.eu

The National Biomedical and Biotechnology Park (NBBP) in Olomouc is a public-private partnership project whose partners are the City of Olomouc, the Ministry of Industry and Trade, and Palacký University Olomouc together with University Hospital, Technology Park Olomouc and the MedChemBio cluster, a platform supporting development of medicinal chemistry and chemical biology.

NBBP is built around Palacký University (the second oldest university in the Czech Republic, established in 1573) and its research institutes among which the newly completed Institute of Molecular and Translational Medicine represents the state-of-the-art in research infrastructure and has conditions in place to attract researchers from both the Czech Republic and abroad. NBBP covers a fully developed area of over 30 hectares of the Technology Park Olomouc dedicated to companies involved in research, development and manufacturing in fields of biotechnology, biomedicine, medical devices and new materials.

With its UNESCO-protected historical area, the City of Olomouc complements the unique offer of research and development facilities with an attractive living environment.



INBIT – BIOTECHNOLOGY CENTRE IN BRNO

www.inbit.cz

INBIT is a biotechnology centre established as a part of the new Masaryk University campus in Brno located next to University Hospital Brno and the Central European Institute of Technology. Its aim is to provide a modern laboratory and offices in order to gather together start-ups and R&D laboratories of established companies to facilitate cooperation and synergies with top academic scientists and medical doctors.

The 2,000 m² cutting-edge laboratory complex provides companies with fully serviced space with all standard amenities. INBIT is part of the JIC Innovation park run by the South Moravian Innovation Centre established in 2003 by the South Moravia Region, the City of Brno and four universities to promote development of entrepreneurial skills and commercialisation of research in South Moravia.

Located at the intersection between Vienna, Prague and Bratislava, the City of Brno, where Gregor Mendel discovered the principal laws of heredity so long ago, is now an education and research centre that is unrivalled in Central Europe



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