SAXONY!

WIRTSCHAFTSFÖRDERUNG SACHSEN

biosaxony

LIFE SCIENCES IN SAXONY

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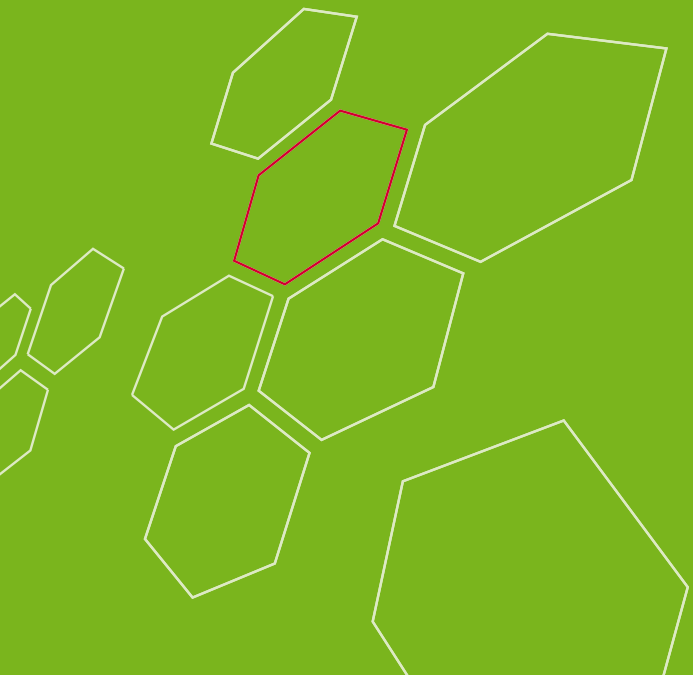


WELCOME

Looking back on a very long success story in the pharmaceutical industry that spans 120 years, Saxony is one of Germany's most dynamic life science regions today. About 250 companies committed towards biotechnology, pharmaceutical, and medical technology successfully cooperate with more than 30 research institutions. They focus on the fields of regenerative medicine/therapies/diagnostics, molecular bioengineering, bioinformatics, nanobiotechnology as well as pharmacogenetics.

Vibrant clusters are emerging primarily around the technology centers BIO CITY LEIPZIG and BioInnovationCenter Dresden. On more than 35,000 square meters of floor space, the scientific and business communities are working hand in hand here – centrally located and in the immediate vicinity of research institutes and university clinics.

With the Center for Regenerative Therapies Dresden (CRTD), a leading research center for regenerative medicine is located in Saxony. In addition, three interdisciplinary innovation centers – B CUBE Dresden (molecular bioengineering), ICCAS Leipzig (computer-assisted surgery), and OncoRay Dresden (medical radiation research) – are also active in the region.

In Saxony, six universities provide specific bachelor's and master's programs of studies in the life science sector, for example, "Health Care Management" at the DIU – Dresden International University. High caliber interdisciplinary doctoral programs and graduate schools promote junior scientists – such as, for example, the doctoral program "IMPRS-CellDevoSys" (molecular cell biology, genetics) in Dresden or the graduate schools "BuildMoNa" (biomaterials) in Leipzig and "DIGS-BB" (biomedicine/bioengineering) in Dresden.

BIOTECHNOLOGY

■ The Leipzig-based **c-LEcta GmbH** develops enzymes as well as microbial production strains for the production of, for example, fine chemistry, food, or biofuels. Towards this end, c-LEcta applies efficient strategies for enzyme optimization and cluster screening, develops and optimizes proprietary production strains for the manufacture of proteins with very high yields, and provides outstanding expertise in biocatalysis applications. The company also possesses a microbial strain collection with more than 5,000 preselected strains and millions of genes in "ready to screen" metagenomic libraries.

■ The Dresden-based **Biotype Diagnostic GmbH** has gained more than a decade of experience in the development and production of test systems in the DNA analytics sector. Biotype's molecular diagnostic solutions set new standards in the field of multiparameter diagnostics for the early and rapid clarification of the most diverse medical issues.

■ Located in Radebeul, the **InnoTERE GmbH** develops, produces, and distributes innovative products for the treatment of bone damages in close cooperation with researchers and clinics. Novel bone cements made of calcium phosphates and polymethylmetacrylate, which permit the minimal invasive therapy of bone defects, form one of the focal points of the corporate development activities.

■ The Dresden-based **Lipotype GmbH** is a spin-off of the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG) and provides the analysis of lipids in the blood and other biological samples. Such Lipotype customers as, for example, pharmaceutical and biotech enterprises or food producers use the analyses for the development of new diagnostic procedures and pharmaceuticals or healthier food.

PHARMACEUTICAL INDUSTRY

■ **GlaxoSmithKline Biologicals** produces influenza vaccines for the global market in Dresden. In addition to seasonal and pandemic influenza vaccines, other liquid vaccines are also bottled and packed here. About 700 employees work at the production site; the annual production capacity amounts to 70 million vaccine doses.

■ As an independent pharmaceutical company conducting its own research, the Dresden-based **APOGEPHA Arzneimittel GmbH** provides a broad range of pharmaceuticals and services for the treatment of urological disorders. Its research focuses on the development of new dosages and new forms of medication as well as clinical developments in urology.

■ The Radebeul-based **Arevipharma GmbH** develops and produces pharmaceutical substances and intermediate products for generic and researching pharmaceutical companies and conducts contract syntheses.

■ As a subsidiary of the Swedish MEDA AB Group, **MEDA Pharma GmbH & Co. KG**'s corporate activities revolving around the development of pharmaceuticals are focused at the **Radebeul production site**. This is also the location of a specific GMP area for the production of drugs to be used in clinical trials. The company is working on therapeutic concepts that focus on the indication sectors asthma & COPD, allergy, cardiovascular, and pain.

■ Approximately 900 different products sourced from medicinal plants and minerals leave the corporate headquarters of the Freital-based **Bombastus-Werke AG**, which date back to 1906, for destinations in Europe, Asia, and Africa. The product spectrum encompasses homeopathics, nutritional supplements, drugs, cosmetics, and also tea. The company is renowned, above all, for cultivating and processing sage plants.

BIOTECH INCUBATORS

BIO CITY LEIPZIG is one of the most modern centers for biotechnology and biomedicine in Germany. In particular, start-up enterprises find individual lab and office spaces with state-of-the-art equipment in this incubator which help foster innovation. On a total floor space of 20,000 square meters, both entrepreneurs and researchers have been working here since 2003. Currently, approximately 25 companies with almost 500 employees have their domicile in the BIO CITY. Located in BIO CITY LEIPZIG's scientific section are, for example, Leipzig University's Center for Biotechnology and Biomedicine (BBZ) and the Fraunhofer Institute for Cell Therapy and Immunology (IZI).

"Molecular bioengineering" is the specific focus of the companies and research facilities working next door to each other in the **BioInnovationCenter Dresden (BIOZ)**. One third of the total floor space of approximately 15,000 square meters is occupied by six professorial chairs of biotechnology from Dresden University of Technology; two thirds of the floor space are currently being used by about 20 start-up enterprises. With its central location in the immediate vicinity of diverse institutions of the Dresden University of Technology (CRTD, BIOTEC, University Hospital "Carl Gustav Carus," Medical Theoretical Center) as well as the Max Planck Institute of Molecular Cell Biology and Genetics (MPI CBG), the BIOZ unites renowned scientific-technical facilities with founder spirit, entrepreneurship, and economic success in close cooperation under one roof.

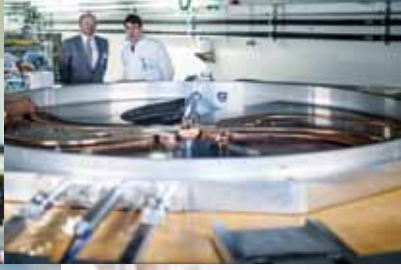
MEDICAL TECHNOLOGY

■ The **Sysmex Partec GmbH** develops and produces inexpensive, precise, and easy to operate diagnostic solutions for developing and newly industrialized countries that assist them in their battle against HIV/AIDS, tuberculosis, and malaria. Sysmex Partec retains the market leadership with its mobile and battery-powered diagnostic device "CyFlow®." As a member of the Japanese Sysmex Group, the company employs approx. 100 people at its corporate site Görlitz.

■ Located in Gelenau in the Erzgebirge Mountains, the **SIGMA Medizin-Technik GmbH** is a manufacturer of equipment used in neurological diagnostics. The EEG and EMG devices of the NEURO-WERK product family excel with their intuitive operability. They provide all methods which are required in day-to-day routine diagnostics of neurological dysfunctions.

■ Leipzig's **BfMC Biofeedback Motor Control GmbH** focuses on the development and production of computer-supported testing and training devices for applications in rehabilitation and occupational medicine as well as for the prevention and vital protection of all parts of the musculoskeletal system.

■ The **Alpha Plan GmbH** in Radeberg sells production lines for medical consumables (for example, dialyzers and other hollow fiber-based filters), production plants for industrial filters (for example, for water treatment), and customer-specific production units for diverse applications around the globe. The company also manufactures hollow fiber membranes for medical-technical and industrial applications in filtration modules as well as hollow fiber modules which are used as special modules in biotechnology and other industrial sectors.

UNIVERSITY RESEARCH

■ The **Center for Regenerative Therapies Dresden (CRTD)** is a Cluster of Excellence at Dresden University of Technology which is unique in all of Europe. The CRTD conducts research on the body's self-healing potential with the objective of developing innovative therapies for the treatment of previously incurable diseases. Towards this end, 100 researchers at 7 different institutions in Dresden as well as nearly 20 partners from the business community put their focus on hematology and immunology, diabetes, neurodegenerative diseases, and bone regeneration.

■ In cooperation with non-university research partners, the **B CUBE – Center for Molecular Bioengineering** at Dresden University of Technology promotes and advances pioneering methods in the field of "molecular bioengineering" and, thus, seeks to understand functional structures in living nature and their utilization in innovative materials and technologies.

■ The **Center for Innovation Competence for Radiation Research in Oncology (OncoRay)** strives to improve the cure of cancerous diseases with the help of a biologically individualized, technologically optimized radiation therapy. OncoRay unites 6 research groups from Dresden University of Technology and the Helmholtz Center Dresden-Rossendorf under its roof.

■ The focal points of research at Leipzig University's **Center for Biotechnology and Biomedicine (BBZ)** combine new methods and technologies across all faculties at the interface of molecular cell biology / genetics and the sectors nanotechnology, biophysics, (nano)medicine, pharmacology, biochemistry, bioinformatics, and biomedical engineering. That's the environment in which interdisciplinary research groups are working on innovations in nanobiotechnology and biomedicine.

NON-UNIVERSITY RESEARCH

■ At the **Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG)** Dresden, 400 cell and developmental biologists from 45 nations address such questions as, for example, how cell division and cell differentiation work, what structures are exhibited by cell organelles, and how the exchange of information and materials takes place between them. Physical processes which influence, for example, the movement of molecular motors are also in the institute's focus. The results gained from this fundamental research provide important clues for the diagnosis and treatment of such diseases as diabetes, cancer, or Alzheimer's.

■ The **Fraunhofer Institute for Cell Therapy and Immunology (IZI)** Leipzig investigates solutions to specific problems at the interfaces of medicine, life sciences, and engineering. The institute develops methods and products for the Business Units Drugs, Cell Therapy, Diagnostics, and Biobanks. Its competences also include biomarkers, antibodies/ligands, stem cell technology, imaging as well as therapeutic and diagnostic model systems (in vitro/in vivo).

■ The **Max Bergmann Center of Biomaterials Dresden** is a joint institution of Dresden University of Technology and the Leibniz Institute of Polymer Research (IPF). It pursues the objective of developing advanced functional materials to be used in medicine and technology which are based on the state of knowledge that has been achieved in biology.

■ The **Max Planck Institute for Evolutionary Anthropology (MPI-EVA)** in Leipzig addresses questions revolving around the evolution of human beings. The scientists analyze and compare the genes, cultures, languages, and cognitive abilities of living and extinct human species, and apes. Researchers from various disciplines such as, for example, linguists, psychologists, geneticists, behavioral scientists, and ecologists closely cooperate in interdisciplinary projects.

NETWORKS

■ The **biosaxony network** represents companies, scientific institutions, and other stakeholders from the life science branch in Saxony. The network pursues the objective of initiating projects among entrepreneurs and scientists, providing services and expertise, harnessing synergies for the continued development of the branch as well as showcasing the regional competences. A specific focus is on supporting the SMEs of the branch; in particular, by coordinating applications for subsidies, organizing workshops and symposiums, providing consultation, and conducting studies.

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■ The **HEALTHY SAXONY e. V.** association is the central communication platform designed to promote the cooperation and the exchange of experiences among the stakeholders of Saxony's health care industry. The initiative, thus, paves the way for cooperation between Saxony's companies and health care and research institutions as well as general and continued educational facilities. It also establishes contacts in Germany and abroad.

HEALTHY
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- in initiating cooperative partnerships.

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