

Life sciences



Did you know...

Luxembourg developed the first Parkinson's disease map with Tokyo. The map compiles information from more than one thousand research articles and opens new avenues in the research on neurodegenerative diseases.

Life sciences

Paving the way for personalised medicine

Health sciences and technologies have experienced strong development in Luxembourg in recent years. Companies as well as public research laboratories are active in a variety of fields, such as biomedical analyses, compound and biomarker discovery, diagnostics, laboratory and hospital equipment and health-related ICT applications and services.

Personalised medicine is a major focus of Luxembourg research. This approach is becoming a reality for a variety of diseases, making it possible to develop more **individually targeted care for patients**. The country's research efforts particularly target neurodegenerative diseases, immunology, oncology, bioinformatics and digital health.

Advances in the field of personalised medicine are fundamentally changing healthcare services and **creating new opportunities in biomedical sciences**. Luxembourg has been at the forefront of personalised medicine since 2008, when it announced important investments in this field and teamed up with world-renowned research institutes. This initiative led to the creation of the Integrated BioBank of Luxembourg (IBBL) and the Luxembourg Centre for Systems Biomedicine (LCSB) of the University of Luxembourg.

The research activities of the LIH are concentrated in the areas of oncology, infection and immunity and population

health. The LCSB focuses on neurodegenerative diseases such as Parkinson's disease as well as on metabolomics and disease network analysis. The centre collaborates with several companies in Luxembourg.

A collaborative approach

Luxembourg is ideally placed for companies to cover the entire EMEA (Europe, Middle East and Africa) region and can be used as a hub to access every important market in Europe. The life sciences sector in Luxembourg attracts researchers from across the globe. They have **access to some of the most advanced biomedical facilities in the world and become part of a multidisciplinary community of scientists**.

Digital health hub

A lot of work in life sciences is virtual and requires cross-border collaboration. Luxembourg's **ICT infrastructure with very high security standards permitting safe exchange of sensitive biological data is a key facilitator for international cooperation in the medical sector**. Its cutting-edge capacities in knowledge management of clinical and medical data and abilities to build computational models for biological analyses puts Luxembourg at the forefront in the fields of bioinformatics and computational biology.



The Integrated BioBank of Luxembourg offers a unique continuing education certificate programme in the Principles of Biobanking, helping scientists learn how to ensure optimal management of biospecimens and bioresources for future research and conservation.

Biobanking

Biobanking plays a key role in helping scientists to learn more about human diseases, their causes, their effects, and to develop better prevention measures, better diagnostic tests and better therapies. IBBL is a public biobanking and biotechnology institute that supplies biological data and analyses to medical research organisations in Luxembourg and abroad.

Offering opportunities for innovation

The House of BioHealth is a specialised hosting and incubation facility where research meets business in an atmosphere that favours communication and exchange. It is home to both established companies and start-ups specialised in biotechnology, clean technology and ICT. The goal is to stimulate the creation, establishment and growth of companies and the transformation of research results into marketable products and services.

Fast-track diagnostics: Syndromic real-time PCR kits

Since its creation in 2007, Fast-track diagnostics has become established as one of the leading global suppliers of real-time PCR multiplex testing for infectious disease detection. The company currently manufactures over 60 different kits including tests used in recent outbreaks of Ebola, Middle East Respiratory Syndrome and Swine Flu. Using Luxembourg as the base for its rapid growth, Fast-track diagnostics currently exports to over 70 countries across the world.

300%

The number of life sciences researchers in Luxembourg's public research organisations tripled between 2007 and 2014.