Biotech R&D in Flanders

A worldwide reputation in biotech research

A long and successful tradition of discovery and innovation in the life sciences has made biotechnology a core focus in Flanders. Among the breakthroughs achieved in the region are:

- Unraveling of the first DNA sequence of a gene (Professor Walter Fiers)
- Development of the first technology to introduce recombinant genes in plants (Professors Marc Van Montagu and Jeff Schell)
- Discovery and development of multiple anti-HIV therapeutics (Professor Eric De Clercq)
- Discovery of tissue Plasminogen Activator (tPA), currently a major treatment for heart failure (Professor Desiré Collen)
- Co-discovery of the Ebola virus and first publication concerning heterosexual transmission of HIV (Professor Peter Piot)
- Discovery of medicines that are international standards in the treatment of schizophrenia, anesthesia and pain management, gastro-intestinal disorders, fungal and parasitic infections (Dr Paul Janssen)
- Unraveling of the functioning of adult stem cells providing an alternative to the use of embryonic stem cells (Professor Catherine Verfaillie)

Today, in addition to private research establishments, Flanders has 12 Public Research Organizations (PROs) active in the life sciences. Together these employ more than 6,100 researchers.

Universities

Catholic University of Leuven (K.U.Leuven)	www.kuleuven.ac.be
Free University of Brussels (VUB)	www.vub.ac.be
Ghent University (UGent)	www.ugent.ac.be
Hasselt University (UHasselt)	www.uhasselt.ac.be
University of Antwerp (UA)	www.ua.ac.be

Research Institutes

Flanders Interuniversity Institute for Biotechnology (VIB)	www.vib.be
Plant Breeding Station (PCS)	www.pcsierteelt.be
Center for Agricultural Research (CLO)	www.clo.fgov.be
Institute for Plant Biotechnology in Developing Countries (IPBO)	www.ipbo.rug.ac.be

FlandersBio V.Z.W. BUILDING BIOTECH BRIDGES
www.flandersbio.be

Flanders Investment & Trade
Government of Flanders - Belgium
www.flandersinvestmentandtrade.com

VIB FLANDERS INTERUNIVERSITY INSTITUTE FOR BIOTECHNOLOGY
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Prince Leopold Institute for Tropical Medicine (ITCM)	www.itg.be
Flemish Institute for Technological Research (VITO)	www.vito.be
Interuniversity MicroElectronics Center (IMEC)	www.imec.be

VIB: Excellence through focus

In order to foster scientific excellence in biotechnology, the Flemish Government founded the Flanders Interuniversity Institute for Biotechnology (VIB) in 1995. Through a joint venture with four Flemish universities, VIB unites the strengths of 60 research teams of nine university departments in a single institute. VIB's mission is to apply molecular biology to improve the quality of life. Major fields of activity are immunology, oncology, neurology, angiogenesis, cardiology, plant system biology, microbiology, and the development of innovative technologies in the field of genomics, proteomics, bioinformatics and system biology. Scientific results are actively translated into intellectual property rights and partnerships with academia and industry. VIB has a worldwide network of collaborations, including over 300 R&D/license agreements with companies. VIB also establishes start-up companies and exploits bio-incubator space.

Universities in Flanders: Among the leaders for post-doctorates

High-quality research at the universities of Ghent (UGent) and Antwerp (UA), the Catholic University of Leuven (KU Leuven), the Free University of Brussels (VUB) and Hasselt University (UHasselt) have led to breakthroughs in various areas of the life sciences. These include cardiovascular disease, neurodegeneration, inflammatory and infectious diseases, cancer and plant systems biology among others. A 2003 survey published in The Scientist ranked Belgium second best place to work for post-doctorates in the life sciences.

A broad network of research institutes

In addition to the universities, Flanders is also home to a broader network of research institutes dedicated to specific life sciences domains.

Microelectronics and Nanotechnology

Pioneering breakthroughs in life sciences have also inspired other disciplines. The Interuniversity Micro-Electronics Center (IMEC), Europe's largest research center in the field of microelectronics and nanotechnology, has launched Human++, a multi-disciplinary research program that aims to develop generic technologies to improve the functionality of therapeutic and diagnostic devices.

Tropical Medicine and Healthcare

The Institute for Plant Biotechnology in Developing Countries (IPBO) orients its research to the needs of developing countries, while the Prince Leopold Institute for Tropical Medicine (ITG) is among the world's leading establishments in training, research and assistance relating to tropical medicine and healthcare in developing countries.

Human Health and Environment

The Flemish Institute for Technological Research (VITO) performs innovative research and contract research for industry and government. Its main interest in biotechnology focuses on human health and the environment.

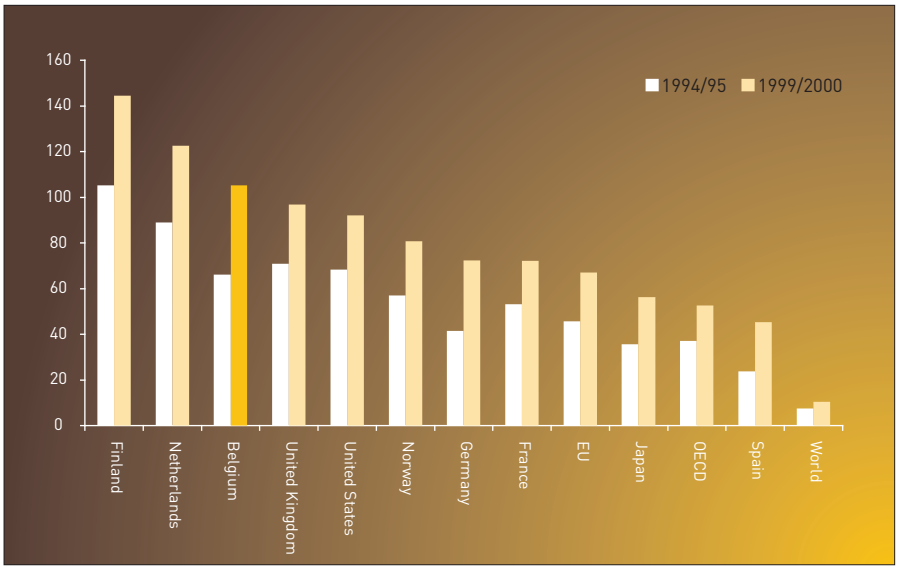
Crop Resistance

The Plant Breeding Station and Center for Agricultural Research develops crop varieties with characteristics such as pest and disease resistance.

Result-driven R&D

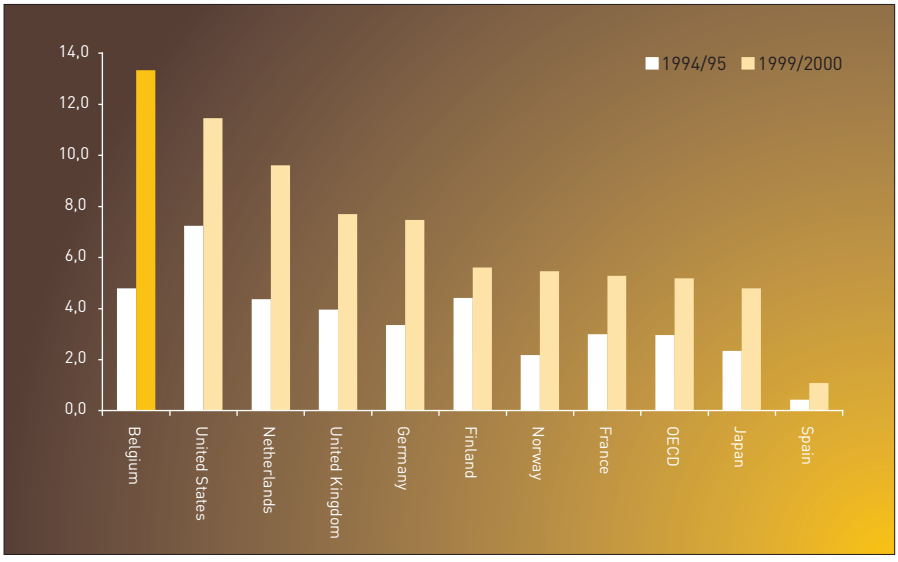
Belgium scores highly in regard to numbers of publications per capita and was the best performing country in terms of biopharmaceutical patent applications (EPO) per million people in 1999/2000.

Figure 1: Biopharmaceutical publications per capita



Source: SCI via host STN, searches and calculations by Fraunhofer ISI. pmC: per million capita

Figure 2: Biopharmaceutical patent applications per million capita (pmC) for the periods 1994/95 and 1999/2000



Source: OECD patent database 2003, OECD quarterly labour force statistics 2003, calculations Fraunhofer ISI.

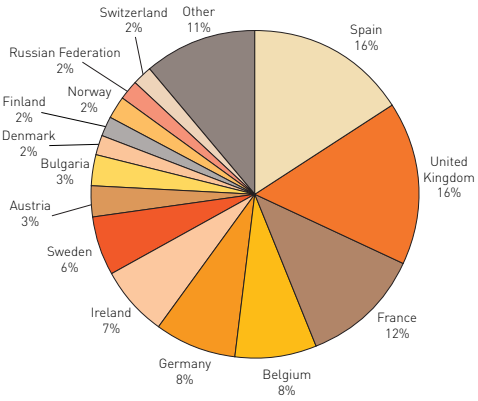
One technology transfer group per university and research institute

Flanders has a tradition of translating its academic discoveries into commercial realities.

More & more companies choose Belgium as a major R&D site

In the period 2003-2004, life sciences companies invested in 90 R&D projects in Europe, creating 5,800 new jobs. Of these, 32% (1,856) were created in Belgium.

90 projects



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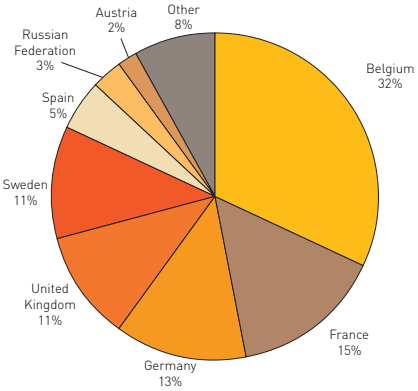

Source: IBM-PLI, Global Invetsment Locations Database (GILD)

Tax Incentives

The Belgian Government has recently initiated incentives such as notional interest deduction and cost+ rulings, which could additionally stimulate the setting up of larger R&D centers. For more information, please see our other information sheets on incentives and on life sciences manufacturing & supply chain management.

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