

Germany's Biotech Industry Going Strong

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November 2010

www.languageconnections.com

Throughout the years, the German biotech industry has become a significant global player. Germany is now one of the leading nations, after only the US, in biotech research and manufacturing, and the leading nation in Europe. The main source for Germany's success is the so-called "red biotech", or medical biotech sector. Forty four percent of all German biotech companies conduct research in this sector, while 9% work in the industrial biotech sector (white), 5% in the agricultural sector (green), and 4% in the bioinformatics sector. At least 37% of the German biotech companies conduct research in more than one sector (1). Research in the field of medical biotech includes microsystems technology, information and communication technology, nanotechnology, molecular and cell biology, regeneration technology and pharmaceuticals (2). Furthermore, research is conducted in the area of genomes and proteomes (or so-called "genomics" and "proteomics" which help to understand the function of genetic material), health and nutrition and bionics. In 2007, around 500 biotech companies were established in Germany, many of which are smaller companies. During the financial crisis in 2009, because the biotech industry is a very stable industry, only five German companies declared bankruptcy. (4)

Support Measures

The growth of this particular industry is largely a result of significant sponsoring and financial investments i.e. 966 million euros were invested in research and development in 2008. In addition, many universities work in collaboration with biotech companies, providing them with highly-skilled students and researchers. Biotech research is also conducted at the four major governmental research associations, the Max-Planck-Institute, the Fraunhofer Society, the Helmholtz Association and the Leibniz Association. Federal funding in the biotech sector has also been significant. The German Federal Ministry of Education and Research has invested approximately €4 billion in the "High-Tech Strategy", which supports technologies such as biotechnology.

In 1995, the German government started a competition called "BioRegio" to provide incentive and support for biotech companies. Four geographic regions were chosen as winners: BioRheinland, BioRhein-Neckar-Dreieck, BioRegion München and BioRegion Jena. These regions were given substantial financial support, a total of €90 million was provided between 1997 and 2005 (5). As a result, many new companies were established – half of all biotech companies in Germany were founded after 1996 – which helped to position Germany as the leading biotech nation in Europe. From 1999 until now, the German government

has continued to support small and medium-sized companies, from the “BioChance” in 1999 to the more recent “KMU-innovativ”, which sponsors small and medium-sized companies with €15 million per selection round (6). BioDeutschland, a trade association in Berlin and the German representative of EuropaBio (composed of 260 members), also supports the growth of the German biotech industry. The association works closely together with other associations throughout Europe and the US. (7)

Biotech companies in Germany

Two of the world’s largest biotech companies are located in Germany: Roche Diagnostics – which specializes in Diabetes Care, Professional Diagnostics, Molecular Diagnostics and Applied Science, and Boehringer Ingelheim – among the leaders in Molecular Products..

The three major German biotech companies are Boehringer Ingelheim, Bayer Schering Pharma and Merck Serono.

Boehringer Ingelheim is family-owned since its foundation in 1885 and focuses mainly on the development of human pharmaceuticals, biopharmaceuticals, chemicals, and animal health products. The company has 41,534 employees worldwide, 11.434 of them work in Germany. In 2009, the company had a turnover of €12.76 billion (8).

Bayer Schering Pharma was founded as a pharmacy by Ernst Schering in 1851. The company currently focuses on research and development of innovative drugs and new therapies and employs more than 36.000 people in Germany. Bayer Schering had a revenue of €10,5 billion in 2009 (9).

Merck Serono was founded in Darmstadt by Friedrich Jakob Merck in 1668 also as a pharmacy. In 2007, the Merck KGaA merged with the Swiss biotech company Serono. After the acquisition, Merck Serono focuses prescription medicines. With its 332 employees, the company had a €408.8 million revenue in 2009 (10).

Regulations

All German biotech companies follow ICH-guidelines. Newly developed drugs have to get official approval either from a national authority (Paul-Ehrlich-Institute (PEI) or Federal Institute for Drugs & Medical Devices) or the European Commission. The national authorities grant permission for national approval, whereas the European Commission gives approval for all countries of the European Union. During the national regulation process, the PEI reports to the Federal Ministry of Health to get approval for clinical trials and medical products. The Federal Institute for Drugs & Medical Devices grants approval for all other medical products and is also responsible for general drug safety monitoring and improvement (11).

Nobel Prize for a German Research Scientist

In 2008, Harald zur Hausen was awarded the Nobel Prize for Physiology or Medicine for his research in cervical cancer. Zur Hausen, a German virologist

and professor emeritus, first announced his hypothesis that viruses are able to trigger cancer in 1976. At that time, he only had a few supporters. “My statements were not well received, and I felt as a lonely voice [...]” (12), Zur Hausen said in an interview conducted right after the announcement of the 2008 Nobel Prize in Physiology on October 6. In 1980, Harald zur Hausen was able to prove that human papilloma viruses (HPV) trigger cervical cancer, and led the way for the development of a vaccine against this infection. Twenty six years later, in 2006, this vaccine was finally developed and distributed. “I think the vaccination is extremely successful.” the professor stated in the Nobel Prize interview. “The major disadvantage at this stage is that it is too expensive for those parts of the world which most badly need the vaccine; namely, the developing world. [...] On December 10, 2008, zur Hausen was awarded with the Nobel Prize in Sweden’s Stockholm Concert Hall. On April 6, 2009 he also received the German Federal Cross of Merit from the former German President Horst Köhler (13).

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