

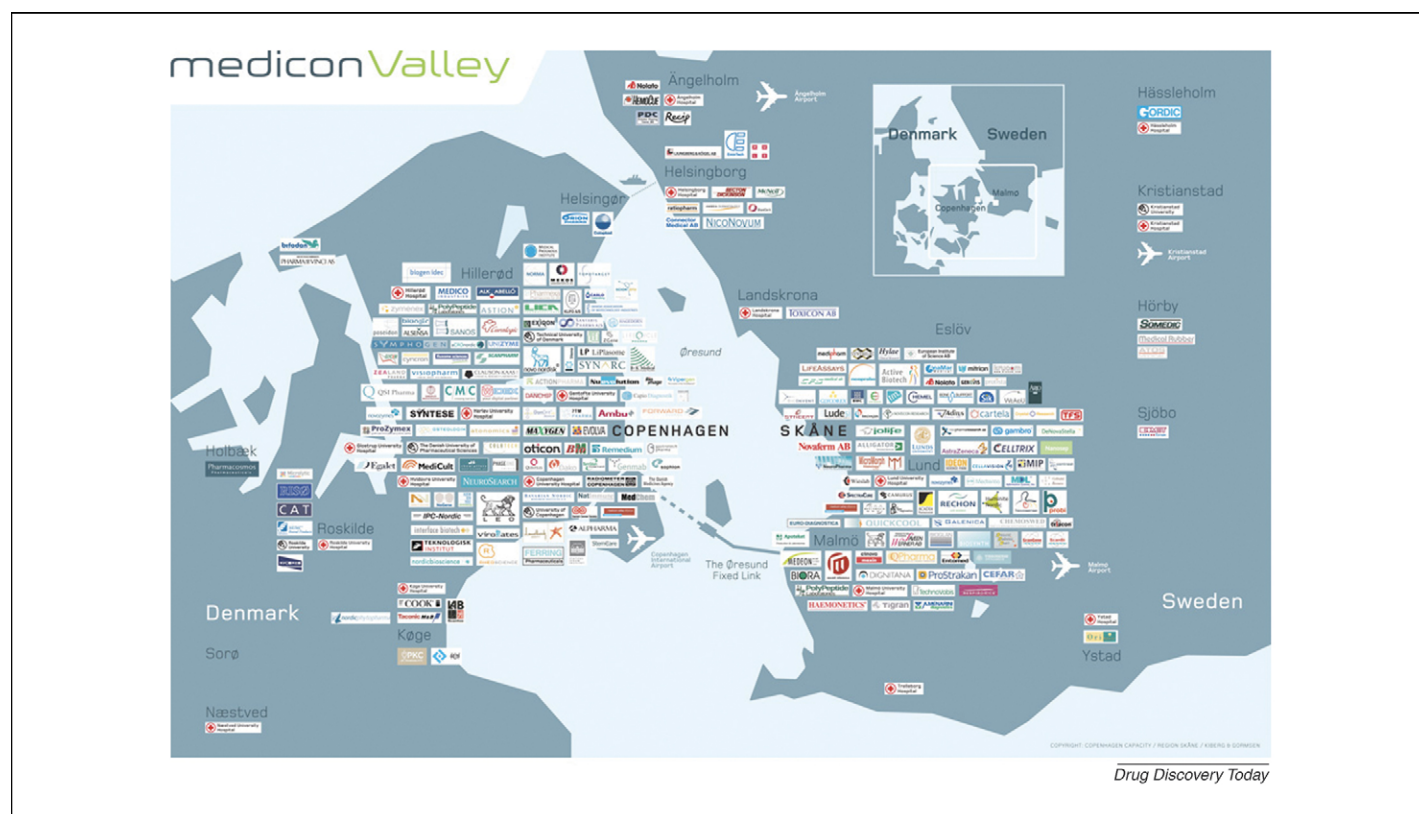


# biotech focus

There is hardly space on the map to add any more names and, while there are still attractive locations available to newcomers, it is clear why Medicon Valley – together with Cambridge in the UK and Basel in Switzerland – is one of Europe's top three biotech clusters.

During the past two decades, the Danish biotech industry has undergone explosive growth. Since the mid-1980s, when there were only about 20 active biotech companies in Denmark, the number of companies has

and biotech companies located throughout the region and it soon becomes apparent why it is colloquially known as Medicon Valley (Fig. 1).



**FIGURE 1**  
Map of Medicon Valley.

multiplied and stands today at 135, of which the vast majority are located in Medicon Valley.

But Denmark's biotech history dates back much further than the 1980s. In fact, it goes back more than 160 years to 1847 and the first fermentation trials were carried out by the world-renowned Carlsberg brewery. This was followed in 1874 by the food ingredients company Chr. Hansen. The early successes of these food and beverage production companies led to pioneering research into enzymes and the formation of companies such as Novo Nordisk, Novozymes, Danisco, H. Lundbeck and Leo-Pharma.

### New generation of companies

Since 1989 the large, well-established companies have laid the foundation for the build-up of a strong cluster of competencies within biotechnology where research, manpower, know-how and knowledge of high-quality have resulted in a new generation of smaller biotech companies in Denmark. These new companies are far advanced in developing potentially promising products and establishing a solid basis for the Danish biotech industry to maintain its strong position in a market that is currently growing by 20% a year.

Today, the biotech industry employs more than 30,000 people in Denmark and is the most important segment within the pharmaceutical sector, with exports topping DKK 40 billion a year.

The industry has special expertise in diabetics, metabolism, neuroscience, cancer, inflammation and allergies. Novo Nordisk, Leo-Pharma, H. Lundbeck and ALK-Abello have all been researching in these fields for many years and have served as the inspiration for many spin-off companies in these therapeutic areas.

The biotech companies have access to good local support and manpower in Medicon Valley, where 5 out of 12 universities offer life-science-related studies. Some 45,000 students are studying life-science subjects and 2600 life-science PhD students are enrolled at the universities. About 7000 life-science students graduate every year. There are also 32 hospitals in the region, of which 11 are university hospitals, as well as 6 science parks with a significant focus on life science and 6 incubators, 2 of which have a specific life-science focus. Medicon Valley is home to 170 medtech companies and more than 50 contract research organisations and contract manufacturing organisations. This crucial mass constitutes a strong card in attracting experienced international talent to the industry.

### Favourable business environment

Another reason for the successful biotech industry is the education system and labour market that foster creativity and teamwork. The unique Danish labour market system offers companies the possibility of adapting easily to business cycles and changing market opportunities. The fundamental concept is that flexibility and security are not contradictory, but mutually supportive. Liberal hiring-and-firing rules combined with a high level of social security provided by the generous Danish welfare scheme lead to high job mobility.

This is backed up by the Economist Intelligence Unit (EIU), which for the third consecutive year has named Denmark as the best country in the world in which to do business and invest.

The analysis is based on the EIU's own models, which take into account market opportunities, government attitudes towards business life, openness to international investments, taxation

systems, macro-economic stability, financing, labour market conditions and a basket of other parameters. The analysis results feature in the EIU's recently published comprehensive report entitled 'Global Outlook' [1].

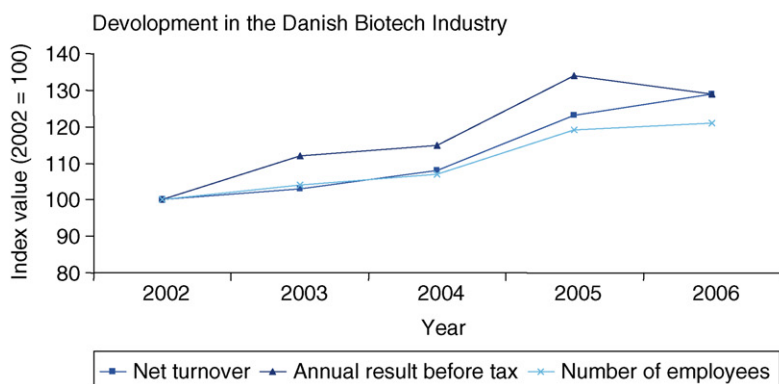
Denmark's ranking as the number 1 country for business and investment reflects the country's economic stability and labour market flexibility; according to the EIU, 'Denmark is very attractive for both American and European investors with a focus on the Scandinavian region. Denmark has rapidly become a test market for new technologies and due to the low level of restrictions it forms an attractive alternative to Sweden and Finland'.

The EIU also identifies the highly qualified pool of local manpower and the low corporate tax regime is attractive to foreign companies considering setting up in Denmark. Complementing this, English – as well as being the working language of leading international companies such as Novo Nordisk – is universally spoken and understood by Danes.

### Strong growth

As a result of Denmark's beneficial business climate, since 2002 the Danish biotech sector has grown significantly – not only in terms of staffing levels and turnover but also earnings. Both earnings and turnover have grown by 30% in the period from 2002 to 2006, while the number of employees has increased by about 25% (Fig. 2).

The growth in turnover and earnings is primarily attributable to the major, established biotech companies, while the increase in the number of employees is seen in young and established companies. Since 2005, growth in turnover has exceeded growth in staffing levels. In 2006, turnover per employee in the biotech



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FIGURE 2

Development in the Danish biotech industry (2002–2006).

**FIGURE 3**

Søren Carlsen, chairman of the Danish Association of Biotechnology Industries.

industry was DKK 1.7 million. By comparison, turnover in the rest of the private sector in Denmark was DKK 1–1.5 million per employee, according to Statistics Denmark. Thus, the Danish biotech industry is already among the sectors generating the highest earnings per employee, despite the fact that it comprises a large number of young companies.

#### Volatile stock market

But all is not plain sailing. Since 2006, when Danish biotech companies raised an unprecedented amount of venture capital – more than US\$ 900 million – the sector has felt the effects of

the volatile stock market that have impacted worldwide.

'In the end of 2007 we could clearly see that investors were (again) becoming nervous and opting for safer, short-term investments. And in line with the trend worldwide, traditional venture funds have been less willing to inject capital into new start-up companies', explains Søren Carlsen (Fig. 3), chairman of the Danish Association of Biotechnology Industries, which last year marked its 20th anniversary. The association works to improve conditions for biotechnological research in Denmark and despite the current difficult financial climate, Søren Carlsen can

point to positive results in the Danish biotech sector during 2007.

'Several of our smaller listed biotech companies have shown good results. For instance, LifeCycle Pharma and Neurosearch made new advances to which the market reacted positively, and we have also seen good results from the larger listed companies. And Denmark's flagship in the pharmaceutical industry, Novo Nordisk, announced promising results with its Phase 3 trials of liraglutide as a treatment for diabetes type II.'

#### New seed fund

Søren Carlsen points out that the Danish biotech industry has an advantage in that, despite the global financial situation, a new Scandinavian seed fund has been established. Novo Seeds, together with another Danish fund Seed Capital Denmark, provides support for bio-entrepreneurs in the very early stages. Furthermore, Novo Seeds makes capital available for pre-seed funding without repayment or co-ownership conditions attached. This will stimulate the formation of new Danish biotech companies in the coming years.

At the same time, the Danish government is currently increasing its research grants and in 2010 Danish government research funding will total 1% of BNP.

For further information, please do not hesitate to contact Barbara Müllertz or Ruth Klyver (see Fig. 4 for contact information).

#### Reference

- 1 Global Outlook Report, Economist Intelligence Unit, Country Forecast, August 2004

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#### Welcome to Copenhagen and Denmark

Copenhagen Capacity and Invest in Denmark are the official investment promotion agencies for Greater Copenhagen and Denmark. The organisations are publicly funded and provides free assistance to foreign companies interested in establishing activities or contacts in Medicon Valley/Denmark.

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**FIGURE 4**

Contact information.