



Biotechnology Report

SLOVENIA

PREPARED BY EUROPABIO AND VENTURE VALUATION IN 2009

STATUS OF THE SLOVENIAN BIOTECHNOLOGY SECTOR

(Financial data in €)

8	Total Biotech Companies
1	Biotech-Therapeutic
4	Biotech-Services
3	Biotech-Other
≥500	Employees
≥50	R&D employees
≥0.8m	R&D spending*
≥60m	Revenue*
NA	Equity Raised
≥0.025m	Government grants*
86%	Percentage of SMEs
0	Percentage of companies publicly owned

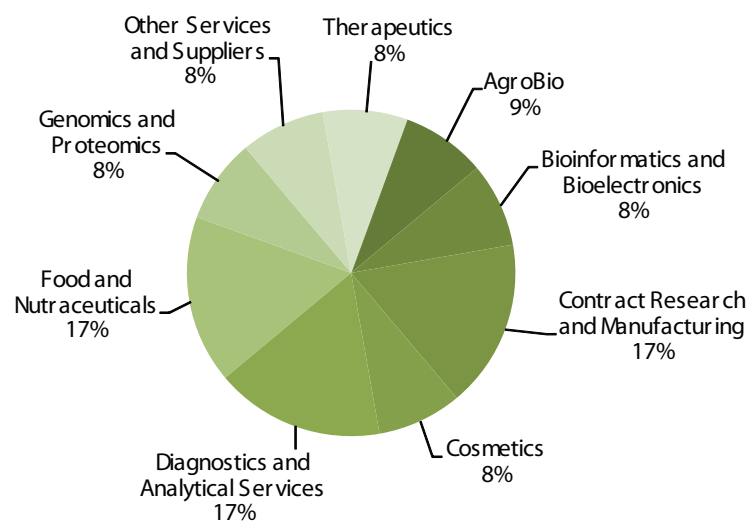
* As some private companies do not disclose financial figures the above is based on available information only.

Of the eight biotechnology companies operating in Slovenia, four are services companies, three are non-therapeutic companies and one is developing therapeutics for human use.

Two major pharmaceutical companies (Krka and Lek, a Sandoz company) also operate in Slovenia. Since the pharmaceutical sector is better equipped to fund its own research and development than the biotechnology sector, they are responsible for most of the life science activity in the country. Both pharmaceutical companies produce generic pharmaceuticals for the domestic and international markets and focus more on chemical expertise than Biotech.

Biotechnology Companies in Slovenia

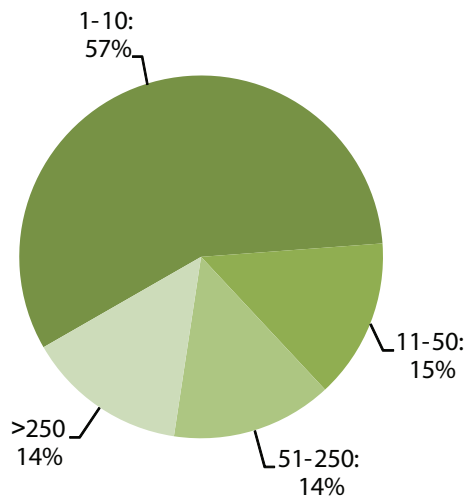
Breakdown by Subcategory based on 12 entries by 8 companies



Source: www.slovenianbiotech.com

Over 80% of the biotechnology companies in Slovenia employ less than 250 people and can be classified as SMEs. Just over 50% employ less than 10 people and qualify as micro enterprises.

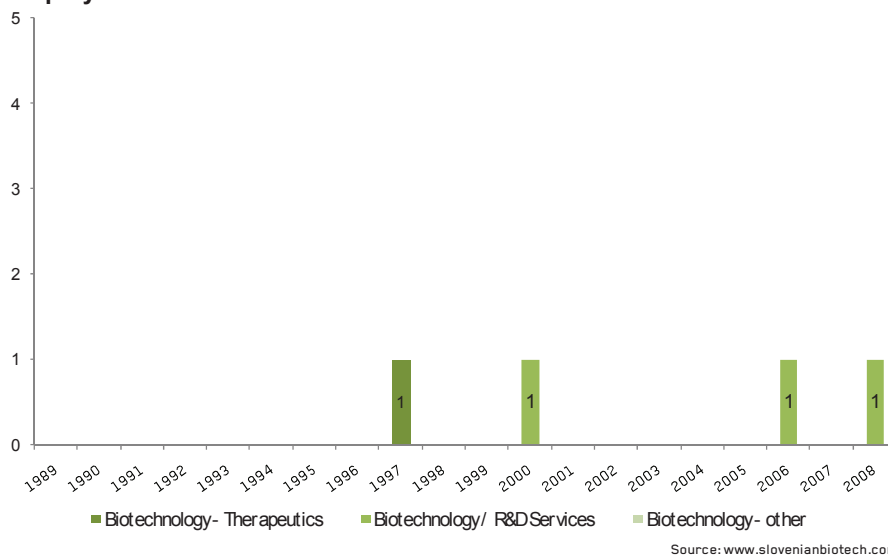
Biotechnology Company Size in Slovenia (number of employees)



Source: www.slovenianbiotech.com

There have been two biotechnology service companies established from independent foundations quite recently in 2006 and 2008.

Company Foundations in Slovenia



Source: www.slovenianbiotech.com

NOTE: Not all companies reported their year of foundation.

SLOVENIA – AN INDUSTRY OVERVIEW

A Slovenian Pharmaceutical Society exists but there is no biotechnology association.

Although government attitudes towards innovation have changed in recent years and several programmes have been established, attention is directed towards ICT and nanotechnologies rather than Biotech. There are no specific programmes to foster development of the biotechnology sector.

Political and Economic Environment

Slovenia emerged from the transition to an EU State in 2004 in a more stable economic condition than the other admitted countries. However, innovation and technological advancement in the country have suffered due to poor coordination and inefficient restructuring. Competition and disagreements

between government offices responsible for promoting innovation have stifled knowledge sharing and expansion. As a result the Technology Agency (TIA), currently in charge of innovation promotion, did not begin to function fully until 2006 delaying important strategic decisions and programmes.

Funding for R&D is sourced from the national budget which generally contributes directly to institutes or universities or which is channelled through the Slovenian Research Agency (ARRS) which provides both policy directed and open-call type funding for biotechnology. Furthermore, the Slovenian Technology Agency (TIA) will directly distribute €139 m to companies in 2009 with more than 70% of these funds coming from EU structural funds. Slovenia's expenditure on research and development, although still slightly lower than the EU average, can be considered as high in comparison with other new Member States. Despite a reasonable amount of national funding, Slovenian biotechnology companies have difficulty obtaining sufficient funds and have a low success rate of applying for EU funds.

Funding from private sources is limited and the venture capital industry is underdeveloped, as in most neighbouring countries. Business angels are formally present but are not very active in the biotechnology field. Investors in general do not have much experience in biotechnology and there have been very few investments in biotechnology start-ups.

Support Infrastructure

The two pharmaceutical centres in Slovenia are Ljubljana and Novo Mesto with most biotechnology companies situated in Ljubljana. The majority of R&D takes place at universities and institutes such as the University of Ljubljana and the Institute Josef Stefan, with some R&D also being performed by pharmaceutical companies.

Slovenia has made a considerable effort to establish incubators, clusters and technology parks such as the one in Ljubljana. These initiatives are still in the early stages of development and quality premises for biotechnology companies are hard to find.

Business advice is difficult to obtain for specialized fields but there are some organizations present that offer general business consulting. Availability of experienced management is low. Within the past five years, the process of establishing a new company in Slovenia has become significantly simpler and can mostly be completed on-line in a short period of time.

The workforce

A variety of life science courses are available in Slovenia but biotechnology studies are not prevalent. Students emerge from their studies familiar with the latest discoveries and theories, but lacking laboratory and industry experience and the knowledge of how their university education can be applied in the workforce. Universities have poor links to industry and there are insufficient jobs available in the field of biotechnology to fuel interest in studying the subject.

"Within the past five years, the process of establishing a new company in Slovenia has become significantly simpler and can mostly be completed on-line in a short period of time"

Technology and intellectual property

The scientific publication rate in Slovenia is growing rapidly and by 2004 had reached 90% of the EU average in biotechnology, with particular focus on health and generic biotechnology subjects.

The biotechnology patent rate in Slovenia, although lower than the EU average, is higher than some old Member, and most new Member States. Several universities have their own offices that deal with IP protection and there are also some private companies that advise on this topic.

Independent technology transfer offices and Innovation Relay Centres exist but have limited experience.

"The biotechnology patent rate in Slovenia, although lower than the EU average, is higher than some old Member and most new Member States"

Products in the Pipeline:

The one therapeutic company in Slovenia chose not to disclose their pipeline products therefore this information is unavailable.

DEVELOPMENT CAPACITY INDEX

The development capacity index was calculated for Slovenia according to the description in Appendix A and can be used to compare the status of the Slovenian biotechnology sector with that of the other new Member States and candidate countries. It consists of a qualitative factor of 38 and a quantitative factor of 58.

10 DCI

KEY FEATURES

3 positive key features:

- **There has been a high level of effort exerted for R&D with the establishment of clusters, science parks and incubators**
- **Expenditure on R&D is relatively high**
- **The procedure for establishing new companies has been greatly simplified (partly web-based)**

3 negative key features:

- **Biotechnology is not addressed by a specific initiative on the part of the government**
- **Business advice is difficult to obtain for specific sectors such as biotechnology**
- **Both public and private sources of funding are difficult to access**

Slovenia has a good base for growth in the field of biotechnology but the sector would particularly benefit from a biotechnology specific action plan.

SOURCES

The Slovenian Biotechnology Database (www.slovenianbiotech.com) part of the global Biotechgate database (www.biotechgate.com)

Survey from the Public Agency for Technology of the Republic of Slovenia; 2008

Survey from Educell d.o.o.; 2008

**BIOTECH
GATE** | 
COMPANY DATABASE

Company interviews; 2008-2009

BioPolis - Inventory and analysis of national public policies that stimulate research in biotechnology, its exploitation and commercialisation by industry in Europe in the period 2002-2005 - National Report of Slovenia; March 2007

In collaboration with:



APPENDIX A: CALCULATION OF THE DCI

The Development Capacity Index (DCI) was developed as a means of representing the development status of a country in a format that allows comparison with other countries and regions. The resulting value indicates the respective countries' relative rank among their peers and considers both the existing state of affairs (represented by the quantitative factor) as well as the potential for development (represented by the qualitative factor). A higher DCI indicates the presence of a more advanced biotechnology industry and a more favourable environment for future growth.

Evaluation of the Qualitative Factor:

The qualitative factor was used to evaluate the framework available for the development of the biotechnology sector. Factors considered were existence of a pharmaceutical industry, level of government support, availability of public and private financial support, existence of a qualified workforce, establishment of technology transfer offices and technology parks, and general awareness of patenting and the IP protection processes.

As shown in the following table, each factor was assigned a weight based on the subjective assessment of its relative importance for the evaluation of a country's development potential. Each factor was then evaluated for each country based on information gathered from literature, and interviews with local stakeholders and companies. A rating was assigned for each factor ranging from 0 (non-existent) to 4 (excellent) and individual ratings were summed to give the total qualitative factor for that country.

QUALITATIVE FACTOR	WEIGHTING	RATING	POINTS	WEIGHTED POINTS
Pharma Industry (existing know-how)	2	Non-existent	0	0
		Minimal	1	2
		Average	2	4
		Good	3	6
		Exceptional	4	8
Government Support	2	Non-existent	0	0
		Minimal	1	2
		Average	2	4
		Good	3	6
Public Financial Support	3	Exceptional	4	8
		Non-existent	0	0
		Minimal	1	3
		Average	2	6
Private Financial Support	3	Good	3	9
		Exceptional	4	12
		Non-existent	0	0
		Minimal	1	3
Qualified Workforce	3	Average	2	6
		Good	3	9
		Exceptional	4	12
		Non-existent	0	0
Tech Transfer	4	Minimal	1	4
		Average	2	8
		Good	3	12
		Exceptional	4	16

Tech Parks or Clusters	4	Non-existent	0	0
		Minimal	1	4
		Average	2	8
		Good	3	12
		Exceptional	4	16
IP Protection Awareness	4	Non-existent	0	0
		Minimal	1	4
		Average	2	8
		Good	3	12
		Exceptional	4	16

Evaluation of the Quantitative Development Factor:

The quantitative factor was calculated based on the number of biotechnology companies present, their category of activity (therapeutics, services and other biotechnology sectors), and the number of products under development. Parameters were all individually measured with emphasis placed on smaller and medium sized companies conducting research on human therapeutics, as these are considered to be the drivers of innovation for the industry.

Within each country, points were assigned per company depending on the type of company, number of employees, products on the market and products in development, as shown in the following table. Fewer points were attributed to products on the market as this is an indication of existing industry and know-how, whereas the development of new products indicates the potential for growth.

It is to be noted that few companies chose to disclose their product information therefore these parameters have only a small impact on the overall DCI. It was assumed that all biotechnology companies developing therapeutics had at least one product in the pipeline.

Factor	Points
Biotechnology therapeutics company	5
Biotechnology services company	1
Other biotechnology company	3
< 10 employees	5
10-100 employees	4
100-500 employees	3
500-1000 employees	2
> 1000 employees	1
no data or 1 product in development	1
2 products in development	2
3 products development	3
4 products development	4
5 or more products development	5
1-2 products on the market	0.25
3-5 products on the market	0.5
5-10 products on the market	0.75
10-20 products on the market	1
more than 20 products on the market	1.25

Points calculated for all companies in the country were then summed to give the total quantitative factor for that country.

Prepared by:



The European Association for Bioindustries

www.europabio.org



www.venturevaluation.com

Information about the project can be found at www.14allbio.eu

All company details and data are available on:



www.biotechgate.com