



## Biotechnology Report

# THE SLOVAK REPUBLIC

PREPARED BY EUROPABIO AND VENTURE VALUATION IN 2009

## STATUS OF THE SLOVAK BIOTECHNOLOGY SECTOR

(Financial data in €)

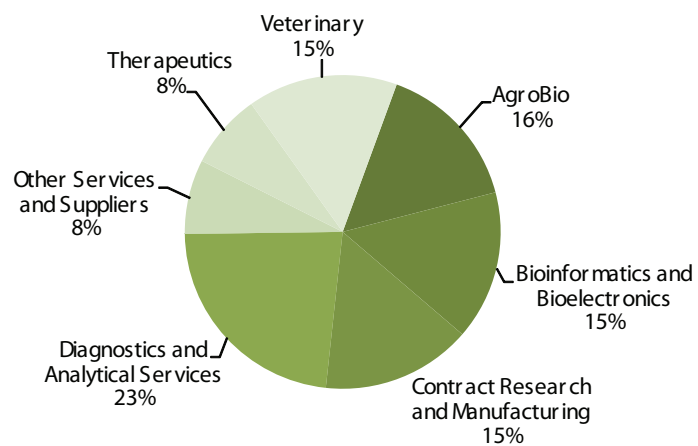
10	Total Biotech Companies
1	Biotech-Therapeutic
6	Biotech-Services
3	Biotech-Other
≥210	Employees
≥15	R&D employees
≥0.4m	R&D spending*
≥10m	Revenue*
NA	Equity Raised
NA	Government grants
100%	Percentage of SMEs
0	Percentage of companies publicly owned

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

Of the ten biotechnology companies operating in the Slovak Republic, more than half are service companies and only one focuses on the development of human therapeutics.

### Biotechnology Companies in the Slovak Republic

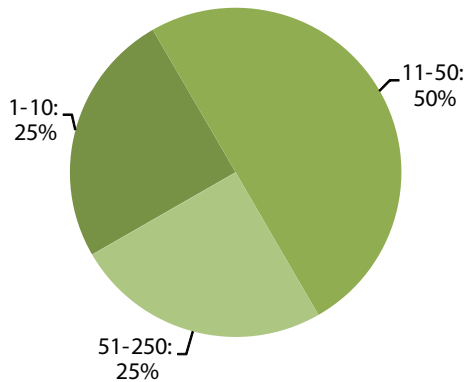
Breakdown by Subcategory based on 13 entries by 10 companies



Source: [www.slovakbiotech.com](http://www.slovakbiotech.com)

All the companies that disclosed information about their number of employees in the Slovak Republic are SMEs employing less than 250 people. One of these companies can be further classified as a micro enterprise employing less than 10 people.

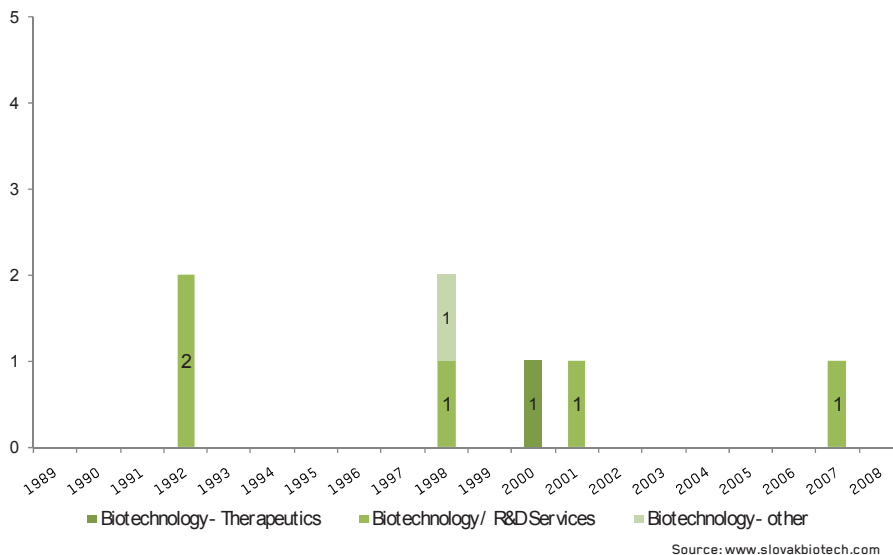
## Biotechnology Company Size in the Slovak Republic (number of employees)



Source: [www.slovakbiotech.com](http://www.slovakbiotech.com)

In 2007, the first biotechnology company since 2001 was founded in the area of genetic diagnostics services, according to the available data.

## Company Foundations in the Slovak Republic



Source: [www.slovakbiotech.com](http://www.slovakbiotech.com)

NOTE: Not all companies reported their year of foundation.

## SLOVAK REPUBLIC – AN INDUSTRY OVERVIEW

The Slovak Republic has been active in the biotechnology industry since the 1950's with the industrial production of penicillin. At present, the biotechnology landscape is not greatly developed but plans to increase its prominence are beginning to emerge.

Currently, there is no coordinated innovation system or specific biotechnology development plan in place. Each ministry in the Slovak Republic supports biotechnology by various means but there is a lack of homogeneity. The creation of an innovation system has been stated as a priority for the government in their 2008 to 2013 innovation strategy.

There is a Slovak Association of Industrial Biotechnology and a Slovak Association of Research Based Pharmaceutical Companies.

**"The Slovak Republic has been active in the biotechnology industry since the 1950's with the industrial production of penicillin"**

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## Political and Economic Environment

The funding agencies for science and technology are the National Agency for Support of Science and Technology and the Slovak Research and Development Agency. Funding from the state is limited and as a result the business sector is a main contributor to R&D funding.

Since 1993 there is also a National Agency for Development of Small and Medium Enterprises established under the framework of the PHARE programme. This agency coordinates activities, including financial ones, at the international, state, regional and local levels in order to support the development of SMEs. There are no biotechnology specific funding programmes established by the government.

There is a lack of venture capital and angel investor funding in the Slovak Republic particularly at the seed stage.

## Support Infrastructure

Most Slovak biotechnology companies are located in the capital of Bratislava and most research takes place in the universities and numerous institutes. There is also a Business and Innovation Centre in Bratislava which acts as an advisor and coordinates the Innovation Relay Centres in the Slovak Republic.

The government has outlined a National Innovation Policy as part of their Innovation Strategy plan for the period of 2008-2013. The three main priorities indicated in the plan are a legislative framework, human resources and innovative tools (direct and indirect) for supporting innovation. The plan will focus on creating an innovation system by establishing incubators, innovation centres as well as consulting and other services. A structured system for the distribution of state funds is also planned. It is hoped that this initiative will increase the number of sustainable, innovative SMEs in the country by 2013.

In 2003, the Biotechnological Centre of the Slovak Republic (BITCET) was established to provide state of the art equipment to research laboratories. This is part of the government's plan to create centres of excellence.

## The workforce

Despite the recent low numbers of life science graduates, the Slovak Republic has a highly educated population and relatively low wages.

## Technology and intellectual property

The patent system in the Slovak Republic has historically been regarded as insufficient and has possibly been one of the causes of limited foreign direct investments in the country. Currently, the cost of patent application is prohibitive for most small and medium-sized enterprises in the country. As a result patenting rates are low when compared with the EU Member State average. The publication and citation rate is also lower than average.

The Slovak Republic has strict laws against the production and import of genetically modified organisms.

**"Currently, the cost of patent application is prohibitive for most small and medium enterprises in the country"**

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## Products in the Pipeline:

The biotechnology company developing human therapeutic products in the Slovak Republic chose not to disclose its pipeline therefore this information is unavailable.

## DEVELOPMENT CAPACITY INDEX

The development capacity index was calculated for the Slovak Republic according to the description in Appendix A and can be used to compare the status of the Slovak biotechnology sector with that of the other new Member States and candidate countries. It consists of a qualitative factor of 14 and a quantitative factor of 52.



## KEY FEATURES

### 3 positive key features:

- **The Slovak Republic has a long history in biotechnology (industrial production of penicillin)**
- **An innovation system is being created as a government objective within the 2008-2013 Innovation Plan**
- **The workforce is highly educated**

### 3 negative key features:

- **Little coordination exists within the sector and a specific biotechnology development plan is lacking despite government support**
- **Private funding is lacking at the seed stage**
- **Patent application costs are prohibitive and the patenting rate is low**

The government has shown some support for biotechnology, but a concrete action plan for industry development based on the existing biotechnology sector should be developed.

## SOURCES

The Slovak Biotechnology Database ([www.slovakbiotech.com](http://www.slovakbiotech.com)) part of the global Biotechgate database ([www.biotechgate.com](http://www.biotechgate.com))

Company interviews; 2008-2009

Innovation Policy of the Slovak Republic for 2008 to 2010.

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 Slovak Republic; March 2007

## In collaboration with:



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# SLOVBIOTECH



## 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
<b>Pharma Industry (existing know-how)</b>	2	Non-existent	0	0
		Minimal	1	2
		Average	2	4
		Good	3	6
		Exceptional	4	8
<b>Government Support</b>	2	Non-existent	0	0
		Minimal	1	2
		Average	2	4
		Good	3	6
<b>Public Financial Support</b>	3	Exceptional	4	8
		Non-existent	0	0
		Minimal	1	3
		Average	2	6
<b>Private Financial Support</b>	3	Good	3	9
		Exceptional	4	12
		Non-existent	0	0
		Minimal	1	3
<b>Qualified Workforce</b>	3	Average	2	6
		Good	3	9
		Exceptional	4	12
		Non-existent	0	0
		Minimal	1	3
<b>Tech Transfer</b>	4	Average	2	8
		Good	3	12
		Exceptional	4	16
		Non-existent	0	0

<b>Tech Parks or Clusters</b>	4	Non-existent	0	0
		Minimal	1	4
		Average	2	8
		Good	3	12
		Exceptional	4	16
<b>IP Protection Awareness</b>	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
<b>Biotechnology therapeutics company</b>	5
<b>Biotechnology services company</b>	1
<b>Other biotechnology company</b>	3
<b>&lt; 10 employees</b>	5
<b>10-100 employees</b>	4
<b>100-500 employees</b>	3
<b>500-1000 employees</b>	2
<b>&gt; 1000 employees</b>	1
<b>no data or 1 product in development</b>	1
<b>2 products in development</b>	2
<b>3 products development</b>	3
<b>4 products development</b>	4
<b>5 or more products development</b>	5
<b>1-2 products on the market</b>	0.25
<b>3-5 products on the market</b>	0.5
<b>5-10 products on the market</b>	0.75
<b>10-20 products on the market</b>	1
<b>more than 20 products on the market</b>	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](http://www.europabio.org)



[www.venturevaluation.com](http://www.venturevaluation.com)

Information about the project can be found at [www.14allbio.eu](http://www.14allbio.eu)

**All company details and data are available on:**



[www.biotechgate.com](http://www.biotechgate.com)