



## Biotechnology Report

# ROMANIA

PREPARED BY EUROPABIO AND VENTURE VALUATION IN 2009

## STATUS OF THE ROMANIAN BIOTECHNOLOGY SECTOR

(Financial data in €)

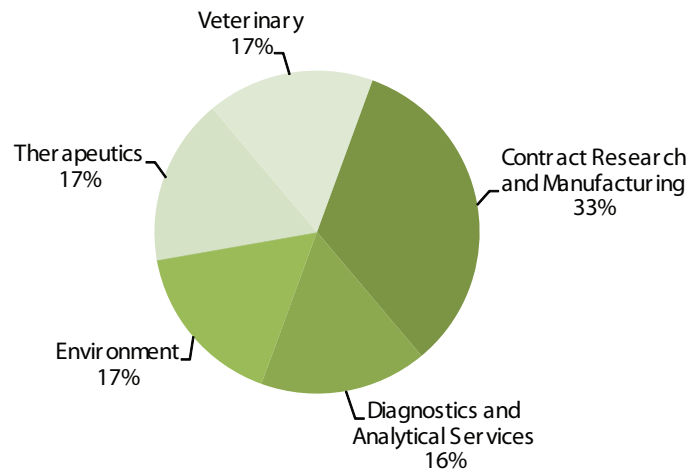
8	Total Biotech Companies
2	Biotech-Therapeutic
4	Biotech-Services
2	Biotech-Other
≥400	Employees
≥15	R&D employees
NA	R&D spending*
NA	Revenue*
NA	Equity Raised*
NA	Government grants
75%	Percentage of SMEs
12%	Percentage of companies publicly owned

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

There are two, formerly state owned, biotechnology companies developing human therapeutic products in Romania. The remaining companies focus on R&D services and veterinary research.

### Biotechnology Companies in Romania

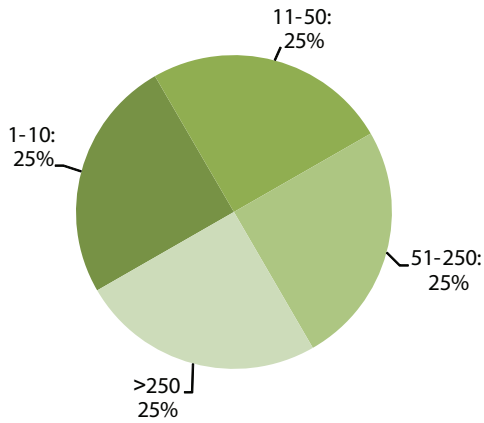
Breakdown by Subcategory based on 6 entries by 8 companies



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

3 of the 4 companies that disclosed their employee numbers qualify as SMEs with less than 250 employees and one of these can further be classified as a micro enterprise employing less than 10 people.

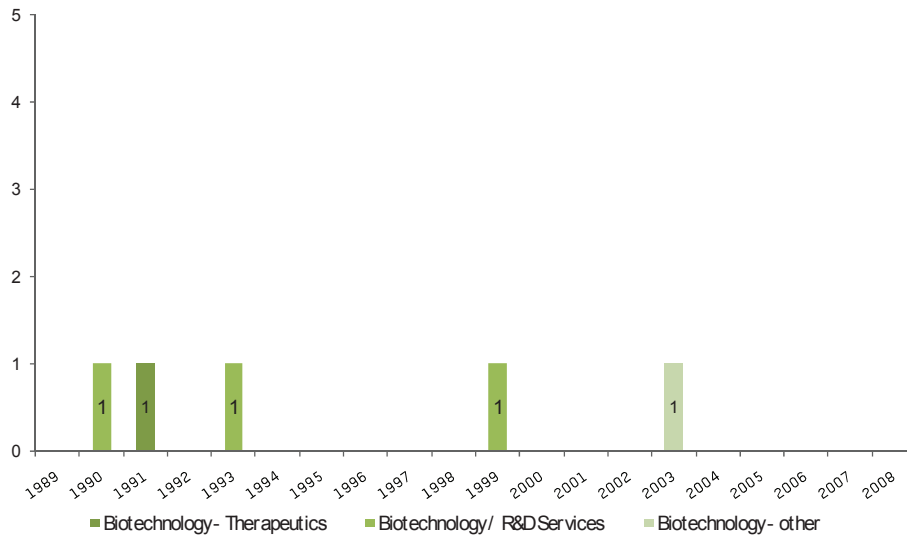
**Biotechnology Company Size in Romania**  
(number of employees)



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

The majority of Romanian companies were founded prior to the year 2000 with no known new foundations emerging in the past five years.

**Company Foundations in Romania**



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

NOTE: Not all companies reported their year of foundation.

## ROMANIA – AN INDUSTRY OVERVIEW

Historically, Romania has had a very limited biotechnology industry with minimal funding available for research and no framework for technology transfer from universities to industry.

Currently, there exists a Romanian Association of Biotechnology but it consists mostly of academics and faculty from the biotechnology departments of universities. The organisation's main purpose is networking between academics and there are no companies as members. Other existing organisations represent the pharmaceutical industry and medical or veterinary doctors.

**"Prior to 2007, the development of the biotechnology sector was of low priority for the government"**

### Political and Economic Environment

Prior to 2007, the development of the biotechnology sector was of low priority for the government. Very few funding programmes existed and there were no specific policies for development and support in place.

In the 2007-2013 National Plan for R&D and Innovation more emphasis was placed on promoting high quality research and innovation in the country as well as building infrastructure, strengthening human resources and increasing partnerships and cooperation. Some of the identified priority fields include ICT, new materials, bio- and eco-technologies, industry, agriculture and food safety, health, energy, environment and transportation. During this period there is around €100 m earmarked for research in the biotechnology sector that organizations can access by means of project competition. Although the government has stated this policy on paper, to date there has been limited application in practice.

While in the past Romania had been considered quite biotechnology friendly in the regulation of genetically modified organisms (GMOs), the government banned the production of genetically modified soy beans in 2007 and the cultivation of GM corn in 2008.

Romanian companies are not highly represented in European framework projects and EU funding is difficult for companies to obtain as co-financing of the projects can pose problems.

There are no known reliable sources of private funding such as venture capitalists or business angels in Romania.

## Support Infrastructure

Most of the existing biotechnology companies are located in Bucharest with some also in Cluj. Construction of the technology park, TEHNOPOLIS, in Iasi began in 2000 and the park has been partially operational since June 2005. The majority of the firms represented are IT and aviation companies but there is a plan to attract biotechnology companies over the next 10-12 years. The park includes a business incubator and biotechnology labs. Generally, technology parks, clusters and incubators are not widely developed in Romania.

## The workforce

Romania has an educated workforce with extensive language skills. The majority of students stay and work in Romania after graduation but there is some emigration particularly of young professionals.

Qualified management is not as difficult to find as in some other new Member States as there is a large base of candidates available with experience in biology, pharmacy, biochemistry and other fields.

## Technology and intellectual property

Each of Romania's eight euro regions is said to have a technology transfer office; however, a real need for this service has not yet been identified since most university research is not in areas that can easily be commercialized. The Romanian State Office for Inventions and Trademarks (OSIM) advises on matters of patenting and intellectual property.

Romania remains far below the EU Member State average in terms of publications and citations.

## Products in the Pipeline:

Neither of the companies developing therapeutic products in Romania chose to disclose their pipeline. Therefore this information is unavailable.

## DEVELOPMENT CAPACITY INDEX

The development capacity index was calculated for Romania according to the description in Appendix A and can be used to compare the status of the Romanian biotechnology sector with that of the other new Member States and candidate countries. It consists of a qualitative factor of 10 and a quantitative factor of 47.



## KEY FEATURES

### 3 positive key features:

- **The Romanian Association of Biotechnology builds networks among academics**
- **Plans exist to attract biotechnology companies to the existing technology park in Iasi during the upcoming years**
- **The workforce is skilled and there is a pool of experienced management**

### 3 negative key features:

- **Development of the biotechnology industry is limited**
- **Application of R&D programmes is limited**
- **Participation rates of Romanian companies in EU framework programmes are low**

Romania has a good base to develop the biotechnology industry. Organisation and cooperation between industry and academia should be promoted by encouraging companies to join the biotechnology association to create more visibility for the sector.

## SOURCES

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

Survey from the National Centre for Programme Management; 2009

Company interviews; 2008-2009

Presentation by Prof.Eng.Ph.D Radu-Grigore Grosu General Director

TEHNOPOLIS Science and Technology Park - The way to change from instruments to practice; 2005

Ministry of Education, Research and Youth - The National Plan for R&D and Innovation for 2007-2013; 2006

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 Romania; 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
<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)