Biotechnology Report

LATVIA

PREPARED BY EUROPABIO AND VENTURE VALUATION IN 2009

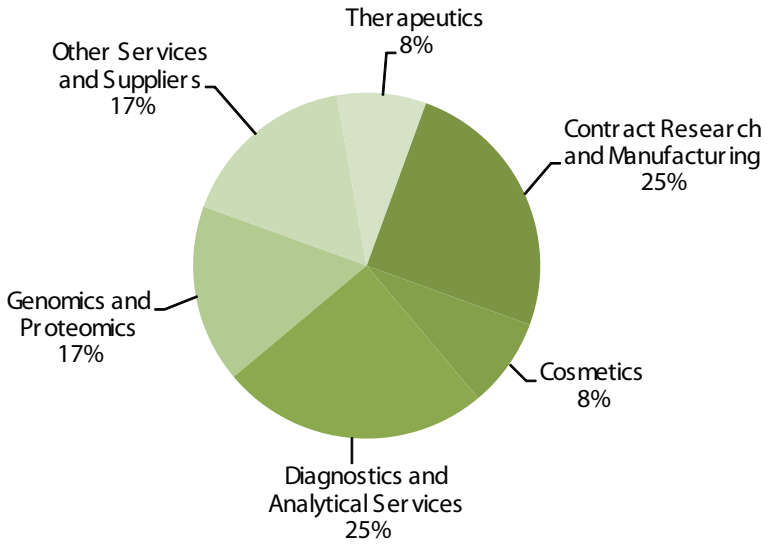
STATUS OF THE LATVIAN BIOTECHNOLOGY SECTOR

(Financial data in €)	
6	Total Biotech Companies
1	Biotech-Therapeutic
4	Biotech-Services
1	Biotech-Other
226	Employees
17	R&D employees
≥0.1m	R&D spending*
≥0.5m	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.

There are six biotechnology companies currently operating in Latvia, one developing human therapeutic products, one focusing on cosmetics and the remaining four dedicated to services related to biotechnology.

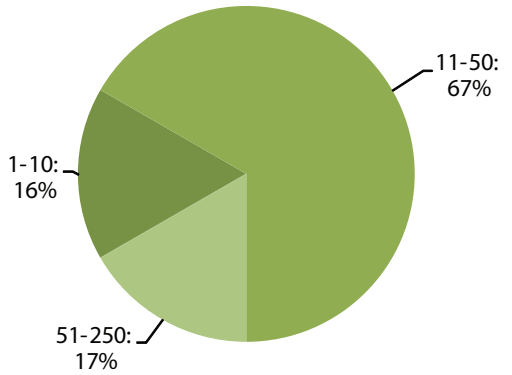
Biotechnology Companies in Latvia
Breakdown by Subcategory based on 12 entries by 6 company



Source: www.latvianbiotech.com

All of the known companies operating in Latvia employ less than 250 people and qualify as SMEs and one of these six further qualifies as a micro enterprise employing less than 10 people.

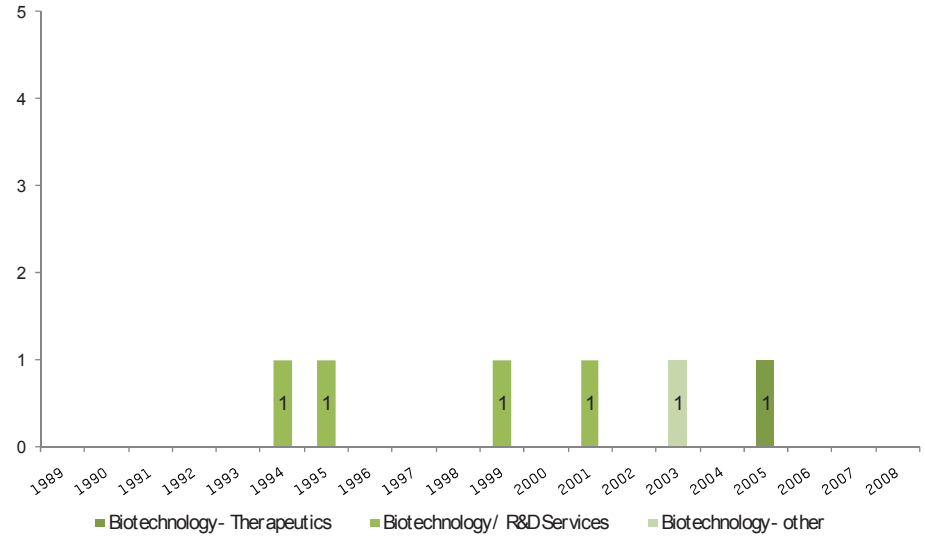
Biotechnology Company Size in Latvia
(number of employees)



Source: www.latvianbiotech.com

The majority of these companies were founded since 1995.

Company Foundations in Latvia



Source: www.latvianbiotech.com

LATVIA – AN INDUSTRY OVERVIEW

Prior to its collapse, Latvia produced 25% of the pharmaceutical and biotechnology products for the Soviet Union. In the 1990's biotechnology in Latvia almost ceased to exist as most factories were shut down and employees were laid off as a result of the political situation. Currently, the industry is in the early stages of recovery, but is hindered by the current economic situation.

Pharmaceutical and chemical industries, as well as a limited biotechnology industry, exist in Latvia and are mainly focused on wood processing, bio-fuel production and improving manufacturing and formulation of compounds. Manufacturing and design of biotechnological equipment is also prevalent. Furthermore, Latvia is becoming recognized for its CRO activity.

The Latvian Biotechnology Association was established in 2006.

Political and Economic Environment

When Latvia joined the EU in 2004 the number of support programmes for research and development increased and biotechnology was indicated as one of six priorities for development by the government. The government

has also stated its intention to establish a "national concept for research and development" by 2010. In 2003-2006 the national innovation Programme was developed to "increase national capacity for innovation". In practice; however, biotechnology appears to be of low priority for the government particularly in the current crisis situation.

Government funding is limited and Latvian R&D investment is close to the lowest of all EU Member States. Historically, most government funding has gone to the scientific institutes and universities to fund various biotechnology projects. EU funds are difficult for small enterprises to obtain since they are required to use the funds first and apply for reimbursement afterwards - a process that is often unfeasible, however not confined to Latvia.

"Since Latvia joined the EU, there has been an increase in available funds for R&D but companies are generally unaware of how to apply for this funding"

The private sector's contribution to R&D funding is very low and the venture capital industry is still in the early stage of development. There are relatively few US and EU private equity funds interested in biotechnology in the Baltic States.

The corporate tax rate was reduced to 15% in 2004 to attract foreign direct investments (FDI) and is one of lowest in the new Member States and candidate countries. Foreign investors in Latvia have the same rights and obligations as local investors.

Support Infrastructure

Almost all biotechnology companies are clustered around Riga, with Jelgava emerging as a second centre.

Cooperation between academia and industry exists at a low level and there is some business advice available to start-up companies. Since Latvia joined the EU, there has been an increase in available funds for R&D but companies are generally unaware of how to apply for this funding. Indeed this explains Latvia's minimal participation in the 6th Framework Programmes.

Current priorities indicated by the government are establishing competence centres and university and industry cooperation, distributing R&D grants and building centres of excellence.

The workforce

"Latvia has the highest ratio of students per capita in Europe and the high quality of education in Latvia also attracts foreign students"

Higher studies in biotechnology related fields are offered at the University of Latvia, Stradins University and Riga Technical University. Latvia has the highest ratio of students per capita in Europe and the high quality of education in Latvia also attracts foreign students. The natural sciences and technology are gaining popularity as fields of study for young students. There are links between universities and industry but the university education does not always fully apply in industry settings.

In the past, Latvian scientists were considered as pioneers in the field and this qualified workforce is still present, with a high availability of specialists and experienced management. With the collapse of the economy there are currently not enough companies to employ all the available professionals and consequently salaries are generally low in Latvia even when compared to other new Member States.

Technology and intellectual property

Currently no technology transfer offices operate in Latvia and products/ technologies are rarely successfully transferred from universities. The majority of new ventures emerge as FDIs.

IP laws in Latvia are fully harmonized with EU legislation

In 2001 the Latvian government funded a project, with more than €600K to establish a population wide biobank by cataloguing the genome of the entire population.

Products in the Pipeline:

The one therapeutic company in Latvia does not release information about its development pipeline.

DEVELOPMENT CAPACITY INDEX

The development capacity index was calculated for Latvia according to the description in Appendix A and can be used to compare the status of the Latvian biotechnology sector with that of the other new Member States and candidate countries. It consists of a qualitative factor of 18 and a quantitative factor of 42.

KEY FEATURES

3 positive key features:

- **Latvia makes an efforts to raise its biotechnology profile through cooperative initiatives such as participating in the founding of Scanbalt bioregion**
- **Biotechnology was identified as a government priority in 2004**
- **The quality of education is high and the workforce is skilled**

3 negative key features:

- **The financial crisis had particularly negative effects on R&D expenditures in Latvia blocking biotechnology development**
- **Investment by venture capital firms and business angels is limited**
- **Due to the absence of technology transfer offices and the dominance of foreign investments, innovative ideas tend to leave Latvia**

Latvia has high R&D potential and requires the development of technology transfer systems to encourage domestic development of innovative ideas.

SOURCES

The Latvian Biotechnology Database (www.latvianbiotech.com) part of the global Biotechgate database (www.biotechgate.com)

Survey from the Latvian Biotechnology Association; 2008

Company interviews; 2008-2009

Latvian Investment and Development Agency – Biotechnology and Pharmaceuticals in Latvia; 2005

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 Latvia; March 2007

BIOCOM AG - European Biotechnology News: Good environment for life sciences; Nov 2006

The Baltic Times – Biotechnology: Latvian Biotechnology industry rising from the dead; Sept 2008

In collaboration with:

Latvijas Biotehnoloģijas Asociācija

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
		Exceptional	4	8
Public Financial Support	3	Non-existent	0	0
		Minimal	1	3
		Average	2	6
		Good	3	9
		Exceptional	4	12
Private Financial Support	3	Non-existent	0	0
		Minimal	1	3
		Average	2	6
		Good	3	9
		Exceptional	4	12
Qualified Workforce	3	Non-existent	0	0
		Minimal	1	3
		Average	2	6
		Good	3	9
		Exceptional	4	12
Tech Transfer	4	Non-existent	0	0
		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:

EUROPABIO
The European Association for Bioindustries

www.europabio.org

VENTURE VALUATION

www.venturevaluation.com

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

All company details and data are available on:

BIOTECH GATE
COMPANY DATABASE

www.biotechgate.com