



Biotechnology Report

CYPRUS

PREPARED BY EUROPABIO AND VENTURE VALUATION IN 2009

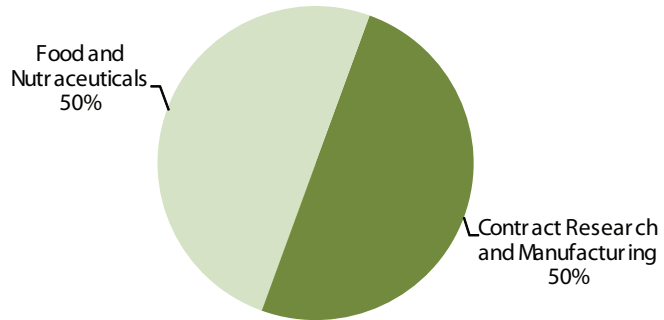
STATUS OF THE CYPRIOT BIOTECHNOLOGY SECTOR

(Financial data in €)	
2	Total Biotech Companies
0	Biotech-Therapeutic
1	Biotech-Services
1	Biotech-Other
9	Employees
6	R&D employees
≥0.5m	R&D spending*
≥0.25m	Revenue*
0.27m	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.

As a small country, Cyprus houses only two biotechnology companies: a Contract Research Organisation (CRO) focused mainly on diagnostic activities but with some preclinical product development, and a nutraceutical company with 11 products on the market.

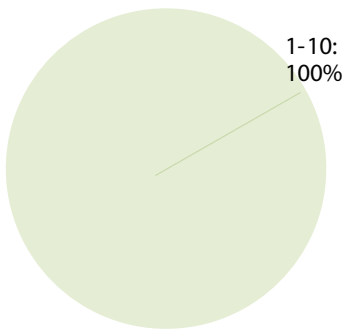
Biotechnology Companies in Cyprus
Breakdown by Subcategory based on 2 entries by 2 companies



Source: www.cypriotbiotech.com

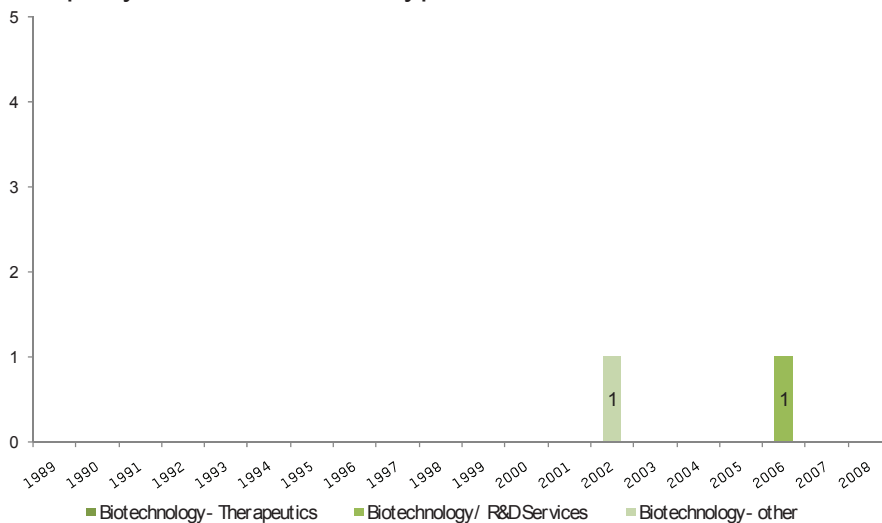
Both of Cyprus's biotechnology companies were founded within the last 10 years and are privately held, micro enterprises employing less than 10 people.

Biotechnology Company Size in Cyprus (number of employees)



Source: www.cypriotbiotech.co

Company Foundations in Cyprus



Source: www.cypriotbiotech.com

CYPRUS – AN INDUSTRY OVERVIEW

The biotechnology industry is not greatly developed in Cyprus and R&D performance is low compared to the rest of Western Europe. There is no biotechnology association; however, the Research Promotion Foundation was created in 1996 to promote and coordinate research activities. In 2000, the Cyprus Innovation Relay Centre (IRC) was established "to improve the competitiveness of local enterprises through Technology Transfer and Innovation Exploitation". The IRC was eventually replaced by the Enterprise Europe Network (EEN) and in 2008 the Business Support Centre of Cyprus (BSC-Cy) was established and is hosted by the Research Promotion Foundation.

There is a pharmaceutical association and two pharmaceutical companies headquartered in Cyprus: Medochemie and Remedica Ltd.

Political and Economic Environment

Despite the tensions that exist because of the division of the island, the political atmosphere in Cyprus is quite stable. Historically, R&D spending as a percentage of GDP has been low in Cyprus compared with the rest of Europe and although the government has made an effort to promote research, science and technology the initiatives have tended not to focus on biotechnology itself. Therefore, although some biotechnology projects have received funding, development initiatives have largely been focused on information and communication technology.

The majority of R&D funding comes from European and national funds with a very small amount coming from private or industry sources. There is very limited access to venture capital funds which are few, small and not Biotechnology specific and there are no known business angels in Cyprus.

Support Infrastructure

There are several business incubators in Cyprus and the first technology park is in the process of being built. The establishment of infrastructure is one of the key initiatives undertaken by the government to improve research and development in the country but this, again, is not biotechnology specific.

The workforce

There has been a postgraduate course in biotechnology available at the University of Cyprus since 2003. There are numerous other courses offered in various biological sciences and graduates are generally aware of the latest research and technologies. Graduates emerge with relevant laboratory expertise but often lack industry experience or the knowledge of how their university education can be applied in industry.

Companies formed by researchers in Cyprus often lack the management expertise needed to successfully bring a product to the market and have difficulties attracting experienced management professionals. These companies often receive support from the existing business incubators; however, this is no substitute for having qualified management on board.

Technology and intellectual property

The majority of research and development in Cyprus takes place at the universities with the establishment normally benefiting from any resulting innovations. Since a large part of the research community has a mandate to increase the number of publications, research is rarely commercialized.

As a result, awareness of intellectual property rights and patenting is low as only a very small percentage of the research population is interested in product development. There is also a lack of legislation on clinical trials.

Until recently there were no formal technology transfer offices in Cyprus and relevant services were provided by the Innovation Relay Centre and Business Support Centre. Universities have only recently become interested in selling intellectual property to companies for the purpose of commercialization and have established policies governing its use.

Some universities have recently made significant steps towards establishing their own technology transfer offices and the Research Promotion Foundation is planning a new programme supporting this initiative.

Products in the Pipeline:

Currently there are no known biotechnology therapeutic products under development in the Cyprus pipeline.

"There are several business incubators in Cyprus and the first technology park is in the process of being built"

"Companies formed by researchers in Cyprus often lack the management expertise needed to successfully bring a product to the market"

DEVELOPMENT CAPACITY INDEX

The development capacity index was calculated for Cyprus according to the description in Appendix A and can be used to compare the status of the Cypriot biotechnology sector with that of the other new Member States and candidate countries. It consists of a qualitative factor of 28 and a quantitative factor of 17.

5 DCI

KEY FEATURES

3 positive key features:

- **General support for R&D from government and innovation centres is available**
- **The government is focused on establishment of infrastructure for R&D such as business incubators and technology parks**
- **Postgraduate courses in biotechnology are offered at the University of Cyprus**

3 negative key features:

- **The biotechnology sector is minimally developed and not a high government priority**
- **R&D performance is limited and commercialisation of biotechnology products is rare**
- **The level of awareness of IP rights is low and there is a lack of legislation for clinical trials**

Biotechnology is not a direct priority in Cyprus therefore, in order to facilitate the development of existing companies, raising IP awareness and elaborating legislation on clinical trials would be of significant importance.

SOURCES

The Cypriot Biotechnology Database (www.cypriotbiotech.com) part of the global Biotechgate database (www.biotechgate.com)

Survey from the Cyprus Research Promotion Foundation; 2008

Company interviews; 2008-2009

Presentation by Antonis Antoniou "Promotion of innovation in the region of Cyprus & IRC Cyprus activities"; 2007

Report by Gigi Manicad and Christein Enzing "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"; 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	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:



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