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BIOTECHNOLOGY IN SPAIN 2007

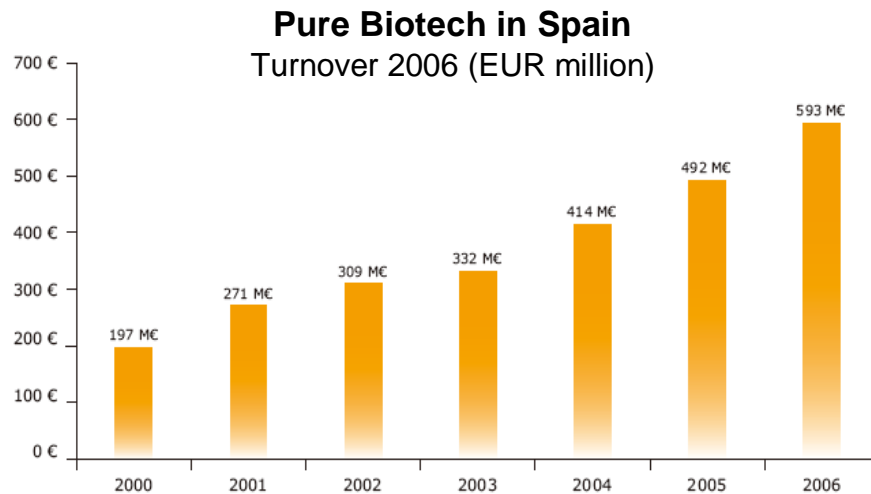
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Biotechnology in Spain 2007

Biotech in Spain: great scientific potential slowly turning into business development

- In 2006, 581 companies were involved in biotechnological research activities in Spain (up from 556 in 2005). 216 of those companies have biotechnology as their only field of activity, and can therefore be rated as "pure biotech" companies (up from 193 in 2005). **Pure biotech companies generated a turnover of EUR 593 million in 2006, a 20.5% increase on 2005.**
- **Pure biotech companies invested EUR 99 million in R&D during 2006** while total R&D investment in biotech reached EUR 251 million. **Pure biotech R&D investment jumped in 2006 by 90%** while total biotech R&D increased by 25%. **Up to 80% of private R&D investment in pure biotech companies is focused in bio-pharma.**
- **It has been estimated that biotechnology generated a EUR 3 billion turnover in 2006**, employing 20,400 people. At the current growth ratios, it is expected that in 2010 the biotech industry will represent 1.6% of the Spanish GDP and more than 100,000 jobs.



Source: GENOMA España

Key Figures

Pure Biotech Companies	
Turnover 2006 (EUR million)	593.00
Turnover Growth in 2006 (%)	20.50
No. of Pure Biotech Companies	216
Employment (Pure Biotech)	3,190
Total estimated biotech turnover	
(EUR million, 2006)	2,961
Employment	20,400
Scientific biotech production	
(as % of world total, 2006)	4.00*

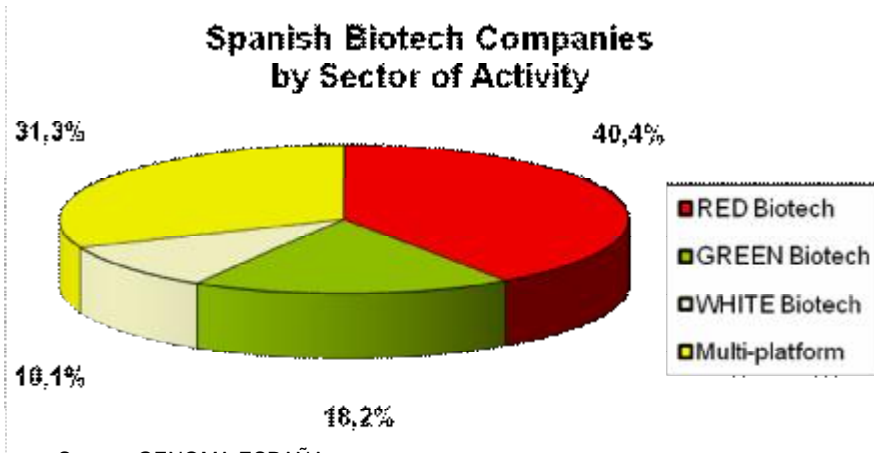
Source: Spanish Biotechnology Association (ASEBIO), GENOMA España
*estimated

- **Spain contributes with an estimated 4% of the world's biotech-related scientific production, ranking 4th in the EU-15, only behind the UK, Germany and France.**
- In exchange, **only 0.37% of the European biotech patents originated in Spain during the 2000-2006 period, ranking 11th among EU-15 countries.** This fact points to a highly qualified scientific base unable to translate those capabilities into business opportunities.
- Lack of development in the Spanish biotech venture capital is clearly an issue. **Only 0.3% (average) of total venture capital investment goes to biotech companies** (2.3% in the EU and 17.3% in the USA).

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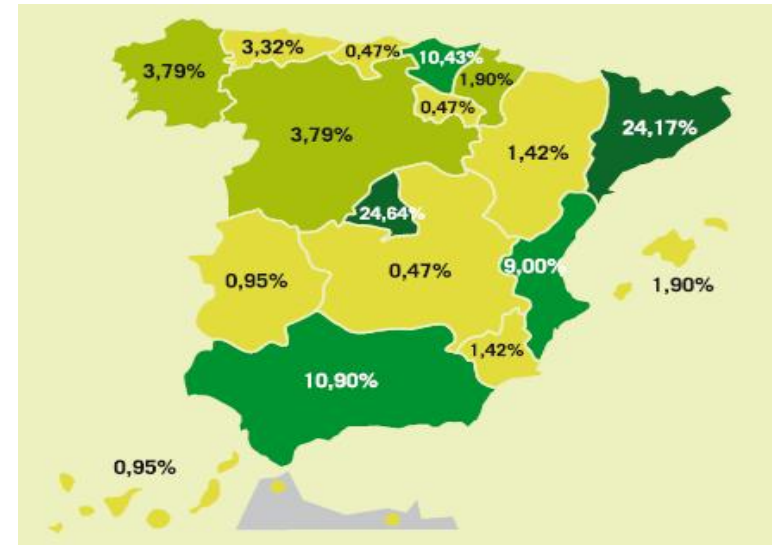
Biotechnology industrial structure: “red biotech” based in Madrid and Catalonia

- The Spanish biotechnology industry could be described like this: “red” and based in Madrid and Catalonia.
- 40% of Spanish pure biotech companies are active in human therapies & diagnosis (22%) and biopharma (18%), which together are referred to as “red biotechnology”.
- 18% of biotech activities are focused in “green biotech” (12% in agro-biotech and 6% in the food sector).
- White biotech (industrial processes) is the main field of activity for 10% of the Spanish biotech companies, with bio-fuels and bio-remediation as key fields of activity.
- Bio-pharma generated 34% of the pure biotech industry's turnover during the 2000-2005 period, while industrial bioprocesses generated an additional 27%. Bio-food is the fastest growing segment with an accumulated 1,522% increase of its turnover in that period.



Source: GENOMA ESPAÑA

Regional distribution of Biotech companies



Source: Spanish National Statistics Institute (INE), ASEBIO

- Madrid concentrates 24.6% of the existing biotechnology companies in Spain, while Catalonia has substantially increased its share of the Spanish industry (from 15% to 24%).
- Andalusia (10.9%), Basque Country (10.4%) and Valencia (9.0%) remain as key regions in terms of biotech business development.
- The emergence of regional bio-clusters is trying to agglomerate and generate critical mass in this industry: BioBask (Basque Country), CataloniaBio (Catalonia), BioVal (Valencia) and BioMadrid (Madrid).

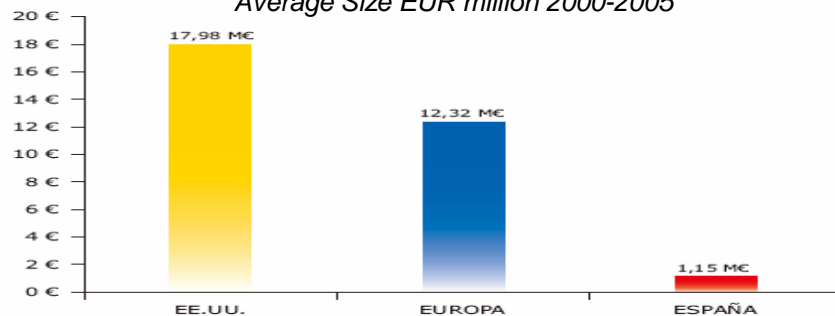
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Biotech venture capital in Spain: the weakest link... for the moment

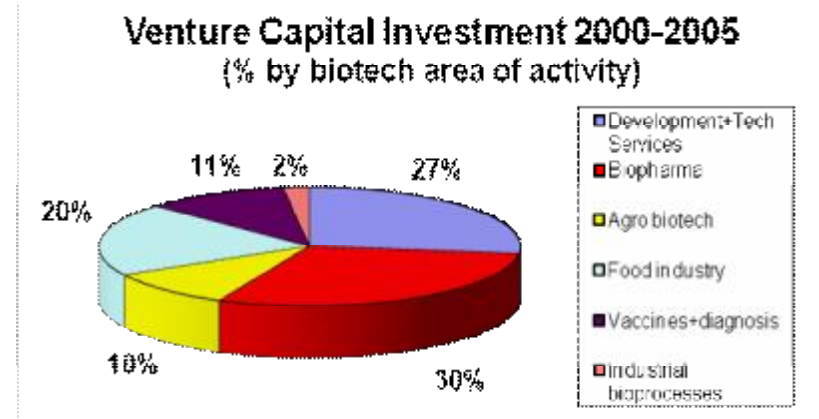
- The presence of biotech and pharma companies in the Spanish capital markets is limited with consolidated pharma companies like **Grifols, Almirall, Faes Farma or Rovi**, and biotech "newcomers" such as **Puleva Biotech, Zeltia and Natraceutical**. GRIFOLS is now listed in the IBEX-35 while ROVI is successfully listed in the **new MAB (Alternative Madrid Stock Exchange)**. Other biotech companies like Neuropharma, Cellerix, Palau Pharma, SuanFarma or Oryzon Genomics are studying their MAB listing, while Thrombotargets may attempt to do so in New York.
- In spite of this, companies like **PharmaMar (Zeltia), NeuroPharma, Palau Pharma (Uriach Group), Genetrix, Biopolis and Mellitus** have raised up to **EUR 150 million** from private investors during the 2005-2006 period.
- However, **venture capital lays at the core of the biotech industry**. Spain has traditionally suffered from a **severe lack of development in its venture capital markets**, whether biotech oriented or not, affecting the biotech industry's potential for development.

Venture Capital Investment Operations in Biotech

Average Size EUR million 2000-2005



Source: GENOMA España



Source: GENOMA España

- In 2005, investment in biotech companies represented less than 1% (0.3%) of total venture capital investment (2.3% in the EU, 17.3% in the USA). The average venture capital operation in Spain in the 2000-2005 period involved a **EUR 1.15 million investment**, while the European average stayed at EUR 12.3 million, according to Genoma España. **50% of Spanish biotech venture capital concentrates during the "seed capital" phase** (vs. 4% in Europe and the US).
- CDTI, the Spanish Technological Development Agency, launched **NEOTEC, an investment fund with EUR 170 million available**. Only in 2007, CDTI-NEOTEC has offered financial support to more than 10 start-up companies.
- **ENISA** is another very active public venture capital fund. ENISA's main operations in 2007 were Archivel (EUR 0.85 million), Thrombotargets Europe (EUR 0.6 million), TCD Farma (0.35 million) and Lactest (0.3 million)

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Biotech venture capital in Spain: main private venture capital funds

- Since 2005, the venture capital environment in Spain is improving also from the side of the private sector.
- **Ysios Capital Partners** is currently Spain's largest venture capital biotech fund with EUR 76 million. **Swiss entrepreneur Joël Jean-Mairet leads this fund** which has participated in the largest international financing ever raised by a Spanish biotech company. **Cellerix obtained EUR 27.2 million from investors including Roche and Novartis**, apart from Ysios itself.
- **Suan Biotech** (EUR 30 million), supported by CajaMadrid and Sodena (Navarre region) has already invested EUR 2 million in **Orphamed** and is also present in **Digna Biotech**. Suan has also provided "seed capital" for Halotec, Pevesa and 3P Biopharmaceutical.
- **Clave Mayor** has been extremely active in 2007 with investments in Idifarma (EUR 0.8 million), Ojer Pharma (EUR 0.5 million), Lactest, Bioalma and 3P Biopharmaceuticals. In 2007, Clave Mayor has participated in three of the main capital investment operations in the biotech industry: Bionostra, Orphamed and Digna Biotech (EUR 3 million).
- **Uninvest** has raised EUR 25 million from several **Spanish universities** and specialises mainly in "seed money". During 2007 Uninvest invested in Genmedica (EUR 0.8 million), Algenex (EUR 0.45 million), Biomaslinic (EUR 0.23 million) and Inmunostep (EUR 0.23 million).
- Other active private venture capital funds in Spain are: **Orza, Talde, BCN Empren, Seed Capital Bizkaia, Ronda Vida and Biotech Angels**.

Key capital investment operations in 2007

Company	Investors	Value (EUR million)
Exxentia	PULEVA Biotech	38.4
Cellerix	International investors (incl. ROCHE, NOVARTIS, YSIOS)	27.2
Zeltia	Santander Investment	15.0
UniBiofocus	Caixanova, Xesgalicia	8.0
Advancell	Venture Capital Funds	7.5
PULEVA Biotech	Pescaderías Coruñesas (5%)	7.2
Bionostra	Private Investors	7.0
King Food (Australia)	Natraceutical (100%)	5.4
Thrombotargets	Biotech Angels, Biolead Capital, ENISA	4.6
Orphamed	SUAN Biotech, Clave Mayor, SODICAL	4.0
Vivotecnia	Ronda Vida, INICAP	3.5
Savia Biotech	Cajamar, IE Almería	3.1
Digna Biotech	Clave Mayor	3.0
Biopolis	CLAS/Talde/CSIC	2.5

Source: ASEBIO

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Biotech leaders in Spain



Digna Biotech is dedicated to develop and market all research products generated by the Centre of Applied Medical Research (CIMA) in Pamplona (Navarra). CIMA is one of the leading private centres for biomedical research in Spain, with more than 300 researchers.

Digna's most promising patent is **CT-1 (organ transplants)**. CT-1 has reached Orphan Status (EMA) and is **expected to be in the market in 2011 (EUR 350 million)**.

Digna has obtained financial support from two major venture capital funds: **Clave Mayor** and **Suan Biotech**.



Genetrix is a spin-off of the National Centre for Biotechnology (CNB).

Today, the Genetrix Group includes several companies: **Cellerix** (cell therapy), **Biotherapix** (human antibodies-based therapy), **Sensia** (biosensors), **Imbiosis** (gluten detection), etc.

Cellerix is the leading company in the group and raised EUR 27 million from international investors in 2007. **Swiss entrepreneur Joël Jean-Mairet has been appointed President** and the company expects to start production in 2010 for **Ontaril®**, its leading treatment for perianal fistulas (Crohn disease) currently in **Phase III**.



Natraceutical is a European leader in **nutraceuticals** and the R&D of natural ingredients for functional foods, cosmetics and pharmaceuticals.

In 2005, Natraceutical took over the Anglo-Swiss **Braes Group (Obipektin)**. Natraceutical has created **Cakefriends**, the first functional food shops chain in Europe, in a JV with the Swiss **Panadoro Group**. The first shop opened in Zürich in 2007.

Natraceutical is listed in Madrid's Stock Exchange and **its turnover reached EUR 158 million in 2007 (+76%)**. The group took over KingFood (Australia) and Viscofiber (Canada) during 2007.



Puleva Biotech was created in 2000 as part of **Ebro-Puleva, the largest agro-food group in Spain**.

The company's core business is in **functional food ingredients**. Its key product is the **Eupoly-EPA (Omega-3 oil)**. The company has expanded its line of products with **Hereditum®**, a range of **premium probiotics** from human breast milk.

Puleva Biotech is listed in Madrid's Stock Exchange. In 2007 **the company paid EUR 38.4 million for Exxentia**, a producer of natural extracts. This was the **largest operation in the Spanish biotech industry in 2007**.



Zeltia is the world leading company in development of **drugs of marine origin**.

PharmaMar is the group's flagship company. **Yondelis®**, its anti-cancer drug, has been granted **marketing authorization (EMA) in 2007** and expects to reach **EUR 1 billion sales in 2012**.

Aplidin® and **Kahalide F** (anti-tumours) are in Phase II, with additional drugs in the pipeline.

Zeltia is listed in the Madrid Stock Exchange and is **one of the largest European biotech groups by market capitalisation**.

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Trade Fairs, Seminars and Congresses

- Ø BIOSPAIN BIOTEC 2008 – Granada, September 17-19, 2008 (next edition 2010) www.biospain2008.org
- Ø FUNCTIONAL FOOD CONFERENCE – Madrid, November 5, 2008 www.recoletosconferencias.com
- Ø BIOTECHNOLOGY CONFERENCE 2008 – Madrid, November 2008 www.recoletosconferencias.com

Specialist Press

- Ø BioMédica www.biomedica.es
- Ø Biotecnologica.com www.biotecnologica.com
- Ø BIOTECH Magazine www.mkm.pi.com
- Ø European Biotechnology News www.european-biotechnology-news.com

Associations

	Spanish Biotechnology Companies Association	www.asebio.com
	Foundation for the Development of Proteomics and Genomics Research	www.gen-es.org
	Spanish Society of Biotechnology	www.sebiot.org
	National Proteomics Institute	www.proteored.org
	National Bioinformatics Institute	www.inab.org