





# The financial potential of Spanish Biotechnology

Cristina Garmendia – President

18 April 2007

# Biotechnology and its subsectors

- Biotechnology uses living processes for industrial applications
- It is an horizontal sector with multiple applications that impact  $\approx 30\%$  of GDP in developed countries (OCDE)

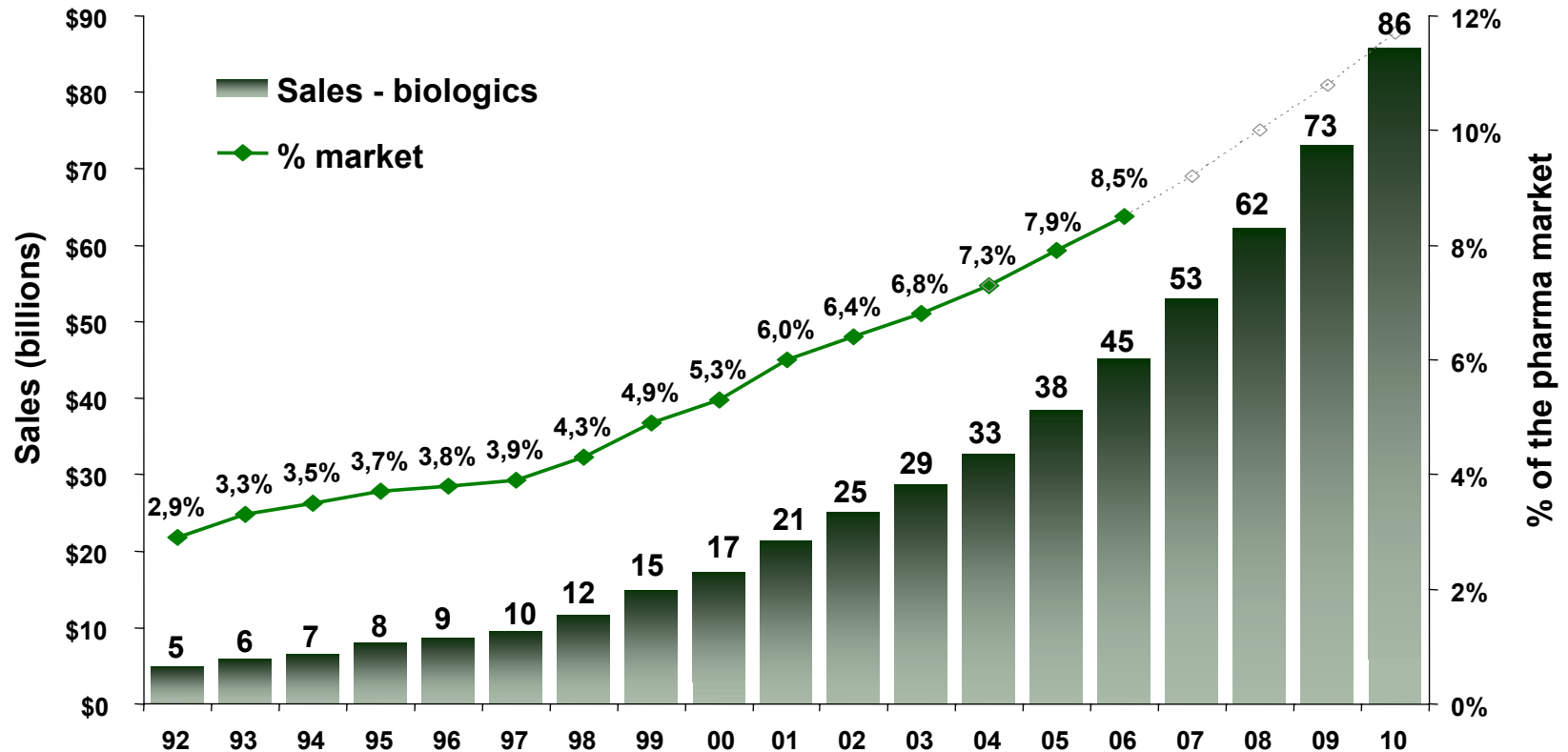
	White biotech	Green biotech	Red biotech	Other
Sector	Industry	Food/agriculture	Health	Technologies
% companies (Spain)	6	20	50	24
Products	<ul style="list-style-type: none"> <li>• Detergents</li> <li>• Refinement, purification</li> <li>• Biofuels</li> <li>• Bioplastics</li> <li>• Textile treatments</li> <li>• Etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Transgenic crops                             <ul style="list-style-type: none"> <li>– Plague resistant</li> <li>– Improved</li> <li>– Adapted</li> </ul> </li> <li>• Improved foods</li> <li>• Etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Biological medicines</li> <li>• Diagnostics</li> <li>• Etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Devices                             <ul style="list-style-type: none"> <li>– Biosensors</li> <li>– Genomics</li> <li>– Proteomics</li> </ul> </li> <li>• Large-scale production</li> <li>• Etc.</li> </ul>
				

## Biotechnology - Key Industry Stats (2006)

	USA	Europe	Asia/Pacific	Canada
Sales / Revenue	\$72B	\$12B	\$3B	\$2B
Annual R&D	\$19B	\$5B	.3B	\$0.6B
# of Companies	1,500+	1,600+	700+	470
# of Employees	146,100	68,000	12,000	7,440
# of Public Companies	363	120 ≈	140	81
Market Capitalization	\$491B	\$26B	\$15B	\$14B

Source: Burrill & Company, Ernst & Young

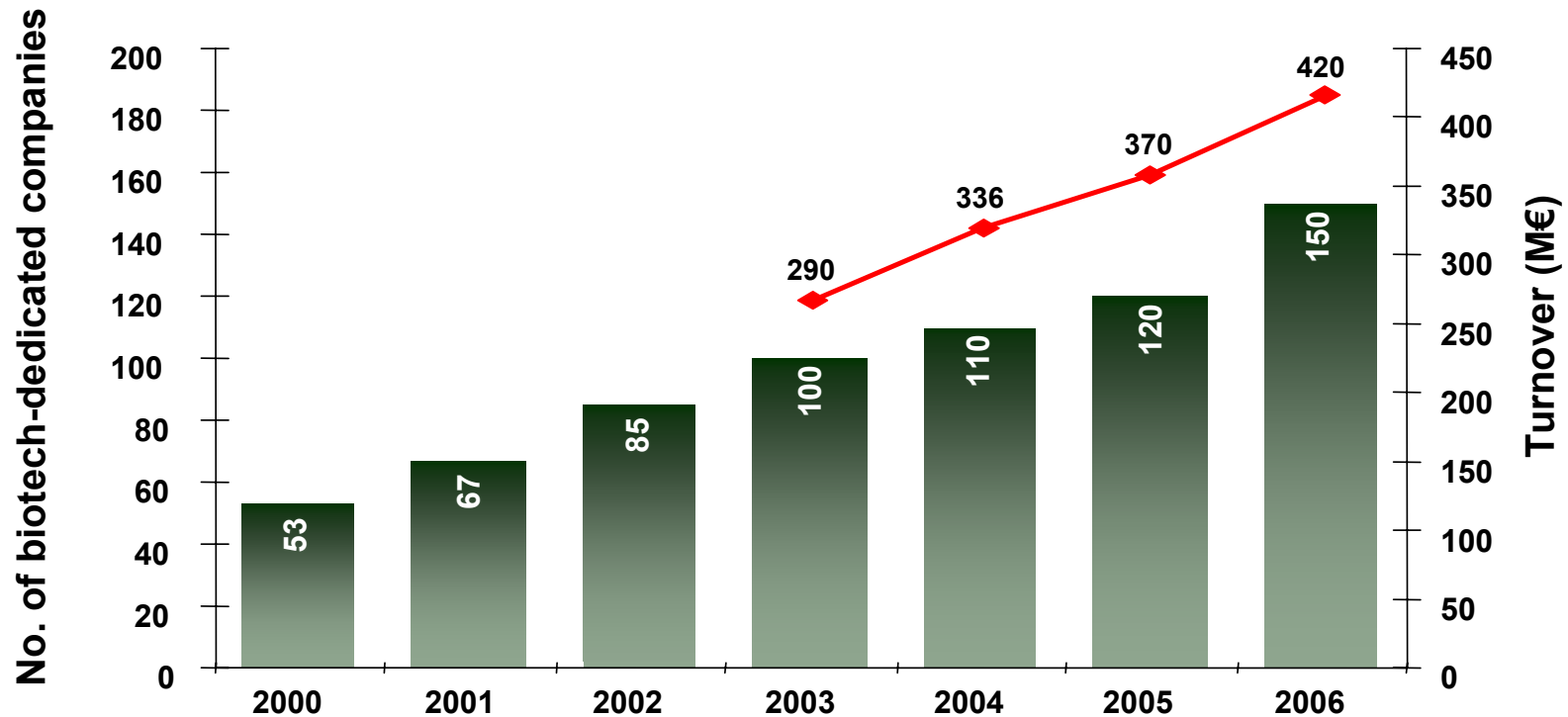
# Biotech's increasing importance (world-wide)



Source: Ernst & Young. Global Biotechnology Report, 2006

- Biotechnology sector (world-wide) growing at **rates above 15%** since 1992 and expected to continue growing at rates **> 10%** in the next four years
- Biologics gaining importance, with **sales expected to reach \$86bn** in 2010
- Biologics market share as % of the pharma market has more than **doubled** in the last 10 years, **from under 4% in 1997 to 8.5% in 2006**

# Spain's biotech sector has grown substantially in the past

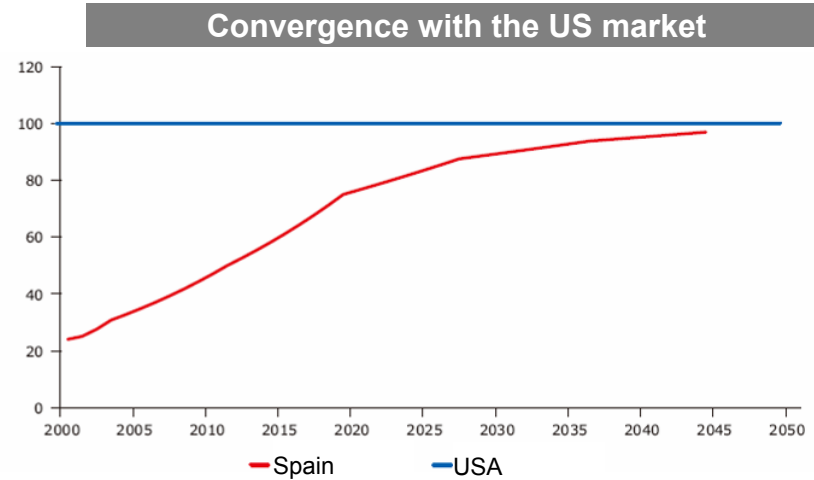


Source: ASEBIO

- In 2006, **>150 companies** were totally dedicated to biotech in Spain, with revenues surpassing **420M€**
- In addition, there were > 500 partially dedicated companies with revenues close to 20.000 €M
- The **total number** of companies dedicated to biotech has almost **tripled since the year 2000**

# But still has a long way to go!

- With a growth rate of  $>20\%^*$ , **Spain's biotech sector is growing** is currently growing **four times as fast as the EU average** and much faster than the **US biotech industry**
- Taken together, Spanish biotechnological main indicators represent only  $\approx \frac{1}{4}$  **the size of the US indicators!**
- Given the substantial difference in size, it is expected that both biotech markets will take at least another **30 – 35 years** to converge



## Resources indicators (INPUTS)

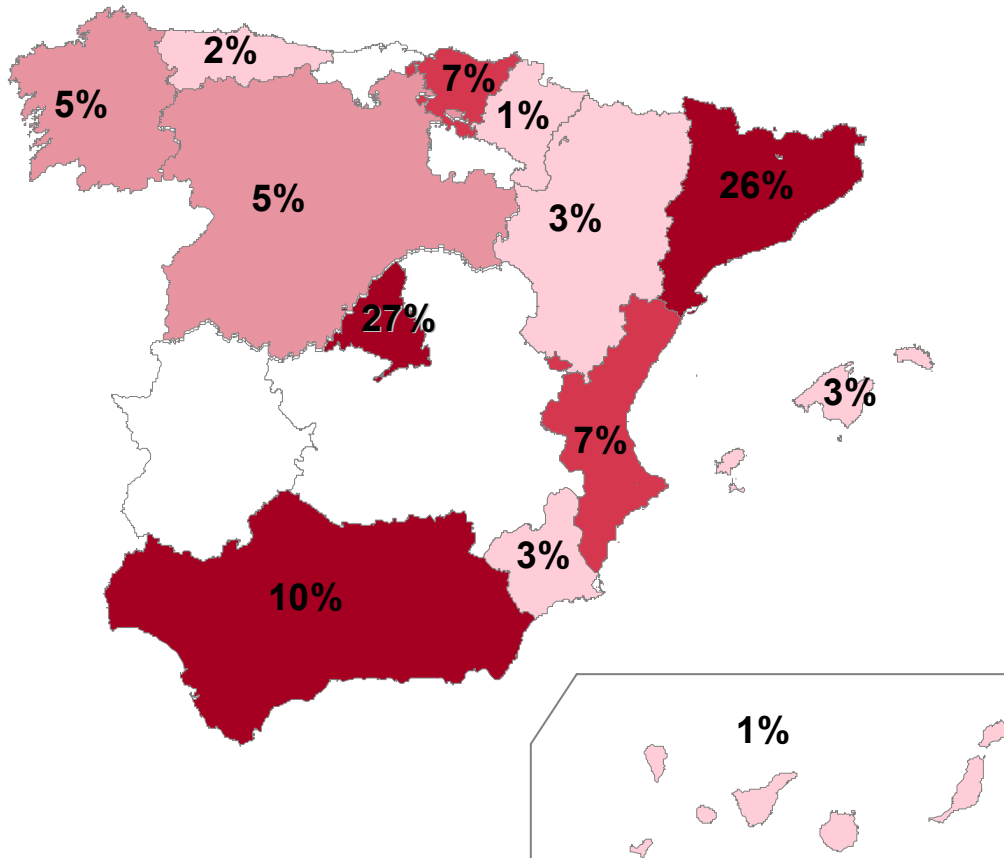
Public R&D investment  
Private R&D expenditure  
VC investment  
No. of employees  
Life sciences PhDs

## Results indicators (OUTPUTS)

Scientific production  
No. of companies  
Published patents  
Granted European patents  
Granted American patents  
Turnover

Source: Genoma España and Nature Biotechnology, volume 24

# Spain's biotech landscape (# of companies by region)

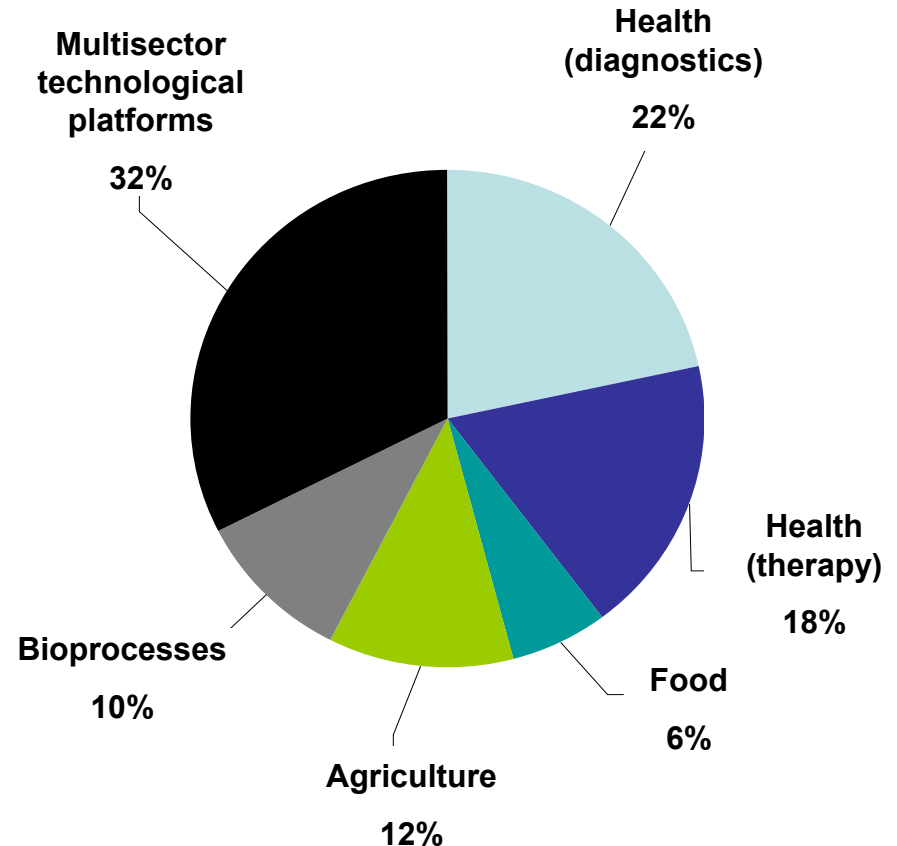


Source: ASEBIO

- Spain's biotech industry is **centered around three main regions:**
  - Madrid
  - Catalonia
  - Andalusia
- The **Basque region** and **Valencia** are emerging as other important biotech regions, hosting now **> 80 biotech companies**
- Other regions such as **Galicia** and **Castilla-León** are also gaining importance thanks to strong local and regional **support and subsidies**

# Spanish biotechnology – features

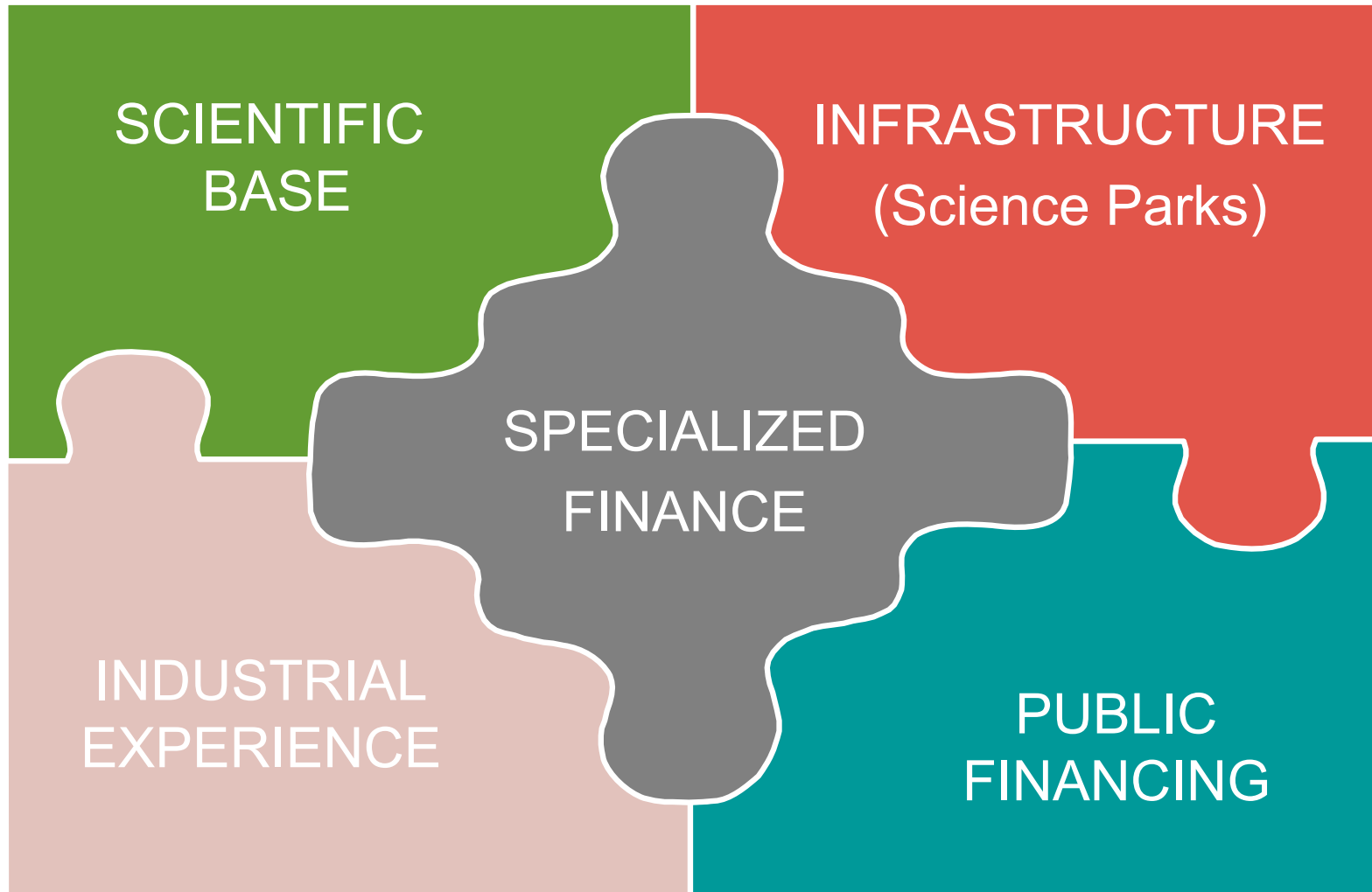
- **Red biotech** (healthcare) is Spain's most important biotech sector, accounting for **more than 40% of the activity**
- Several companies stand out, with **important advances in clinical development** for various treatments
- **Green** (agro-feeding) **biotech** is the **second most important** sector, accounting for a combined 18% of the industry
- **Industrial biotechnology has also seen an** important boom in Spain since 2005, covering various activities like bioenergy , biorremediation, biomaterials and bioprocesses



Source: Genoma España, ASEBIO



# Cornerstones of Spanish biotech's growth





## A broad scientific base

- High quality scientific base
  - 4th place in scientific publications in Europe
  - 1029 articles published in biotech and applied microbiology world-wide (4% of total publications)
  - 6,800 fully dedicated scientists to biotechnology
  - 273 public centers dedicated to R&D
  - **# of patents filed in Spain has increased by 30% in 2005/ 2006, this being the second largest growth in the world after China\*\***
  - In 2006, 126 patents and patent applications were filed in 105 families

2006	Spain (OEPM)	Europe (EPO)	USA (USPTO)	International (PCT)	Total
Applications	12	25	14	44	95
Patents	23	0	8	0	31
Total	35	25	22	44	126

Sources: Genoma España, Nature Biotechnology magazine, ASEBIO

# Supported by a tight network of research centers



Hospital Universitario La Paz

Comunidad de Madrid



Hospital General Universitario Gregorio Marañón

Comunidad de Madrid



## Infrastructure: Scientific parks in Spain



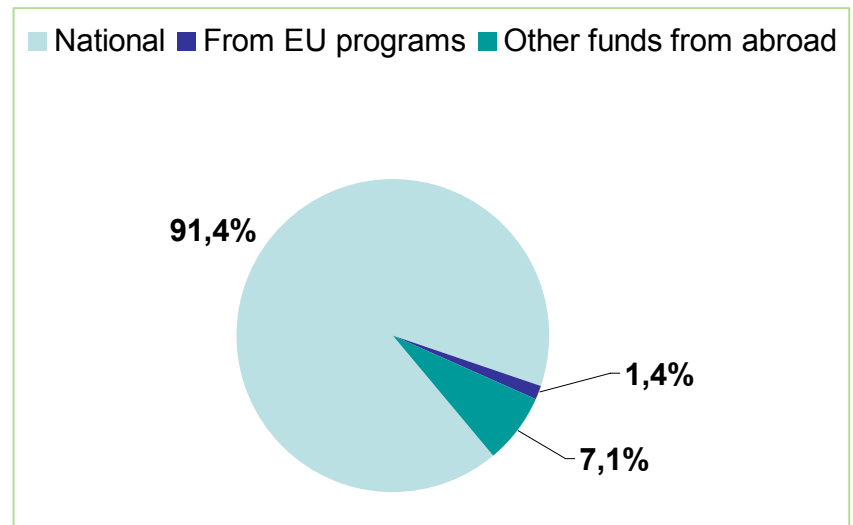
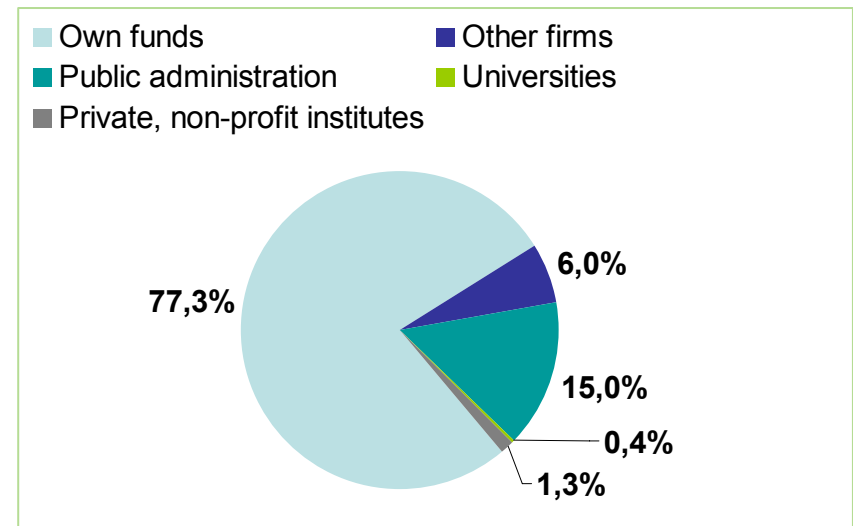
- More than **60 scientific parks**, hosting more than **2,000 companies** in 2006
  - Strong **increase** in the number of biotechnology companies in 2006, specially medicine & health compared to other activities within the parks
  - **More than 60,000 jobs** were created in scientific parks last year

Source: Spain's Technology Parks Association (APTE)



## Public financing

- Historically, Spanish biotech companies have financed their R&D activities mostly through own funds. **The latest public initiatives are expected to increase the state's contribution to R&D through**
  - Public subsidy programs
  - Special **measures for innovative companies**
- Currently, more than 90% of R&D financing is of national origin
  - Opportunity for international investors and specialized funding**



Source: INE 2006



## Public financing

- **Goal:** Double investment in R&D by 2010, with special emphasis on the areas of biotechnology and biomedicine (Project INGENIO 2010)  
⇒ **Attractive public subsidy programs** on a local, regional and national basis

### Some examples

PROJECT	SIZE	TIME FRAME	GOAL
CONSOLIDER	€1500 million	4 years*	Increase critical mass and R&D excellence
CENIT	€1000 million	4 years*	Increase collaboration between public and private entities
NEOTEC	€200 million	4 years**	Multiply by four the number of high-tech SMEs by 2010
I3	€130 million	3 years	Increase number of scientists

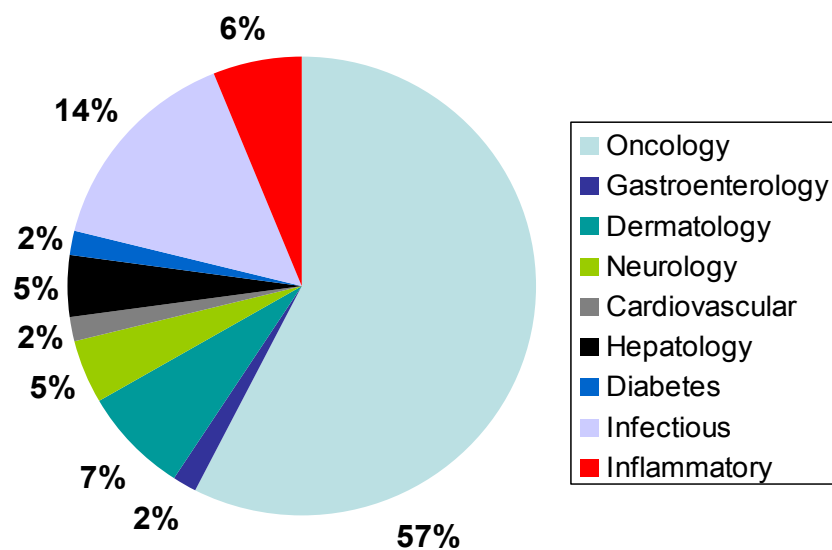
\* 50% private investment

\*\* Investment period

# Experience: Clinical development in Spain

- Growing number of biotech ventures, including early stage companies
- **Growing pipeline**, with **>70** pre-clinical and clinical **trials underway**:
  - **Oncology** the principal area of clinical activity, with 57% of total programs under development
  - Several programs in other indications (**infectious diseases, inflammation, dermatology and neurology**) also in **advanced clinical development** (phase 2 and 3)
  - Several companies with **international reputation**: Cellerix, Advancell, Neuropharma, Pharmamar
  - Important milestones achieved: **Orphan Status for several products** (some of them the first in their class in EU) and co-development agreements

Pre-clinical and clinical projects in Spain 2006	>70
Pre-clinic	>30
In Ph 1	7
In Ph 2	31
In Ph 3	2



Source: ASEBIO

# Spanish biotech in the news



Biotechnology in **Spain**

**SPECIAL REPORT**

*It is better to have 30 good biotech companies than 130 that cannot survive*  
 Javier Araya, CEO of Hyperion Biotech.

nature  
 biotechnology

**Un grupo de médicos murcianos realiza un ensayo clínico pionero en el mundo para buscar un tratamiento de la Esclerosis**

Jano On-li

Medio cente capecitabin

## Conclusions

- Biotech is a promising and growing sector in Spain, represented by more than 600 companies, of which 150 are fully dedicated to biotech
- The sector has come a long way in the past 10 years but still lags behind mayor biotech economies such as the USA, Canada or the UK
- Based on an excellent scientific base, good infrastructure and public support, first companies have emerged with innovative therapies in advanced clinical development
- The government is implementing schemes to further support the development of the biotech industry
- However, the sector needs international capital and experience to maintain above average growth and consolidate international competitiveness

Trends

## Nanomechar sensing tool



**Is specialized finance the missing piece?**

el infarto con células madre

un ensayo clínico con un centenar de pacientes Itas extraídas del músculo esquelético de la

cción precoz de la esclerosis

asebio  
 múltiple

Los integrantes de la Plataforma Detem consideran que la detección precoz de la esclerosis múltiple es clave en el tratamiento de esta enfermedad, que una vez ha evolucionado se vuelve discapacitante. Es en las primeras fases de la patología donde la terapia se hace efectiva y retrasa las consecuencias sus consecuencias.



**Spanish biotech makes its debut**

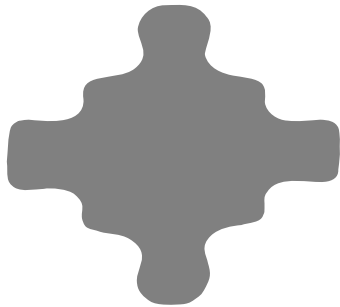
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Spanish biotech makes its debut



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**Is specialized finance the missing piece?**

Thank you!

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