De la Investigación al Mercado Farmacéutico: Mecanismos de actuación y elementos tractores

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YSIOS CAPITAL

PRI Principles for Responsible Investment

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

MEDICAMENTOS INNOVADORES
Plataforma Tecnológica Española

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Contents

01 From Academic Science to Product

What is needed to succeed?

- ✓ Top science
- ✓ Unmet need, market orientation, global vision
- ✓ Willingness from all stakeholders (researchers, institutions, TTOs, regulators…)
- ✓ Entrepreneurship
- ✓ Solid teams
- ✓ Pool of experts
- ✓ Funding (public, private)
- ✓ Company builders
- ✓ …

02 What do we have and where do we stand?

Severo Ochoa Centers of Excellence and María de Maeztu Units of Excellence

EXCELENCIA SEVERO OCHOA

- Centro Nacional de Investigaciones Cardiovasculares (CNIC) www.cnic.es
- Centro Nacional de Investigaciones Oncológicas (CNIO) www.cnio.es
- Institute for Research in Biomedicine (IRB Barcelona) www.irbbarcelona.org
- Centre de Regulacio Genomica (CRG) www.crg.es
- Centre de Recerca en Agrigenomica (CRAG) www.cragenomica.es/es
- Institut de Bioenginyeria de Catalunya (IBEC) www.ibecbarcelona.eu/r
- Centro de Biotecnología y Genómica de Plantas (CBGP) www.cbgp.upm.es/
- Asociación Centro de Investigación Coop en Biociencias (CIC bioGUNE) www.cicbiogune.es/

EXCELENCIA MARÍA DE MAEZTU

- Departamento de Ciencias Experimentales y de la Salud (DCEXS) www.upf.edu/cexs/
- Unidad de Biología Estructural (SBU) www.sbu.csic.es/
- Institut de Ciencia i Tecnologia Ambientals (ICTA) ictaweb.uab.cat
- Departamento de Regulación Génicay Morfogénesis (GEM) www.cellcollectives.com

02 What do we have and where do we stand?

Instituto de Saluld Carlos III Accredited Health Research Institutes

02 What do we have and where do we stand?

Centers of Excellence

02 What do we have and where do we stand?

Situation in the international context

- ✓ 2 universities in the worldwide top ranking in scientific production: UB #46, UAB #129
- ✓ Several research centers in the world top ranking in their fields
- ✓ #11 world country in number of scientific publications
- ✓ #1 European country in number of scientific publications per € 1M spent in the public sector in 2015
- ✓ #6 EU country receiving ERC grants
- ✓ +1% of worldwide biotech patents come from Spain
- ✓ #3 European country in number of clinical trials in 2017 (780)
- ✓ 260 TTOs registered in the MINECO
- ✓ RedOTRI includes the TTOs of 70 universities and of 26 research institutions

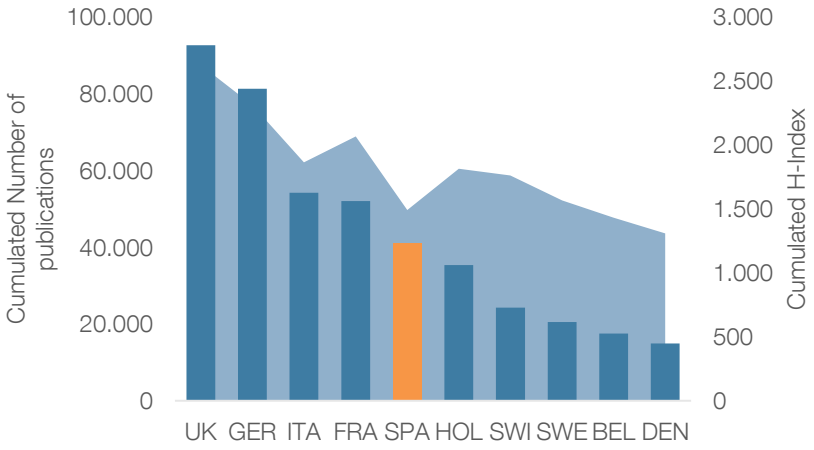
Sources: URAP 2017-2018, Worldwide ranking Scimago, Eusrostat, ERC, OECD, AEMPS, MINECO, RedOTRI, BioCentury

02 What do we have and where do we stand?

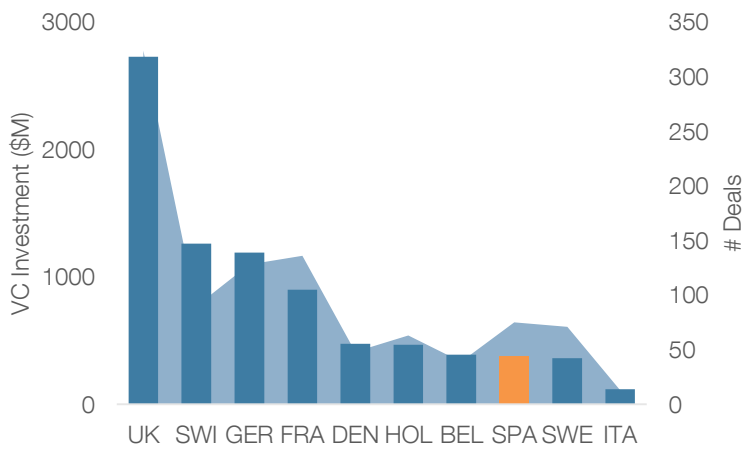
Situation in the international context

- ✓ In the European context – where 27 out of 49 new companies created in 2016 had an academic origin - the scientific output of Spanish research centers, hospitals and universities is strong, but…
- ✓ …VC financing is still low

National Scientific Output



National Private Investment in Life Sciences

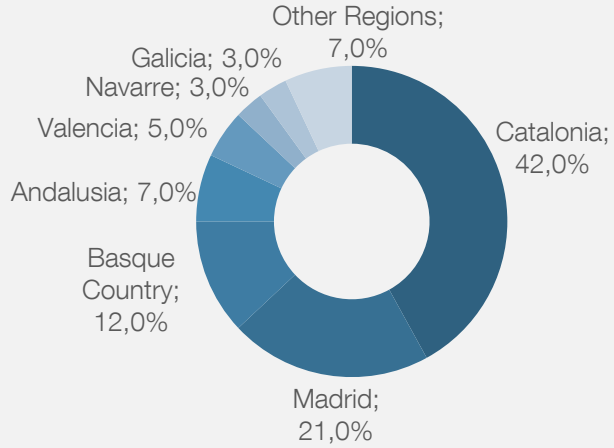


Sources: Scimago Country Ranking and GlobalData

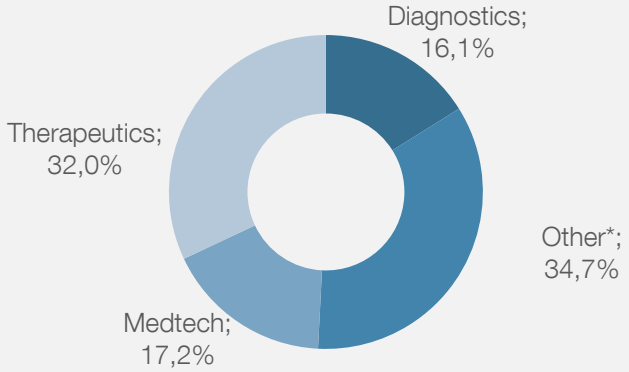
03 Ysios Capital experience investing in Spain

Ysios Spanish deal flow since 2008 – ca. 400 Companies analysed

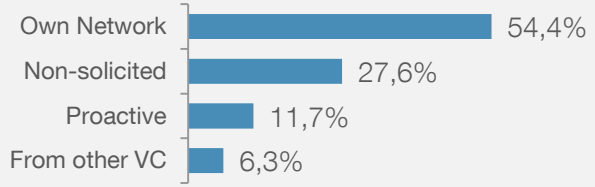
Geographic Breakdown



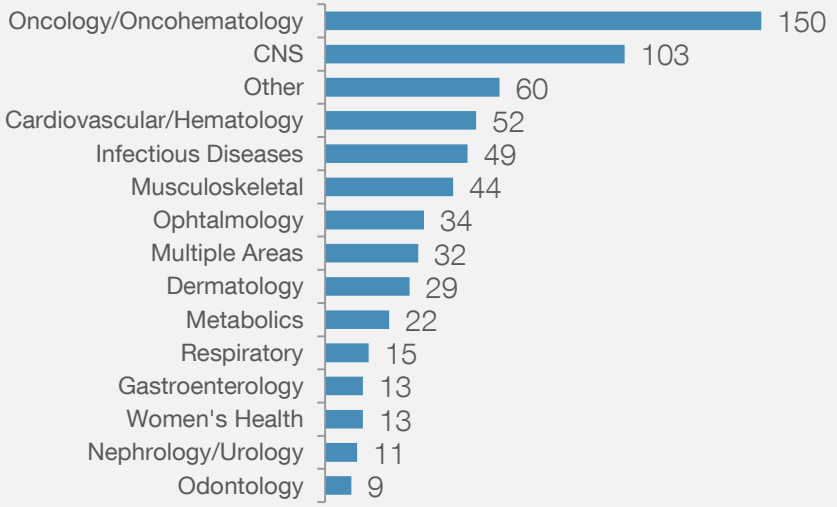
Breakdown by activity



Breakdown by Deal Source



Breakdown by Therapeutic Area including all companies' projects (approx. 692)



(*) Includes drug delivery. value added R&D services, nutraceuticals, e-health

03 Ysios Capital experience investing in Spain

Spanish companies invested by Ysios since 2008

- ✓ Ysios has invested in 11 Spanish companies, 8 of them syndicated with international specialized VCs and 7 with at least 1 corporate investor
- ✓ Over € 180 M international VC capital attracted to Spanish companies or from Spanish origin invested by Ysios

03 Ysios Capital experience investing in Spain

Spanish companies invested by Ysios with science coming from academic institutions

Name	Institute for Research in Biomedicine (Barcelona)
Resources	355 researchers, 25 groups, 8 core facilities
Output	+200 peer-reviewed publications per year
Programs	• Cell and Developmental Biology • Structural and Computational Biology • Molecular Medicine • Chemistry and Molecular Pharmacology • Oncology
Relationship with Ysios	Investment in Inbiomotion, presence in the business advisory board and direct access to researchers

Name	IrsiCaixa – Institut de Recerca de la SIDA (Barcelona)
Resources	+60 scientists, 8 groups, 5 research lines
Output	ca. 200 peer-reviewed publications per year
Programs	• Prevention, eradication and functional cure • Microbiome • New Treatments and resistance to antiretrovirals • Immunopathogenesis • Other diseases
Relationship with Ysios	Investment in Aelix Therapeutics and direct access to researchers

Name	Investigation Center for Applied Medicine (Pamplona)
Resources	287 scientists, 32 groups, 5 core facilities
Output	ca. 180 Peer-reviewed publications in 2015
Programs	• Hepatology • Solid tumors and biomarkers • Oncohematology • Neurosciences • Cardiovascular Diseases • Immunology and immunotherapies • Gene therapy • Cell therapy • Molecular therapies
Relationship with Ysios	Investment in Vivet Therapeutics and direct access to researchers

Name	Universitat de les Illes Balears
Resources	+ 500 scientists, 19 departments, 126 groups
Output	ca. 900 peer-reviewed publications per year
Programs	• Large number of programs in human health-related research
Relationship with Ysios	Investment in Sanifit and direct access to researchers

04 Conclusions

- ✓ Spain produces top worldwide academic research in a large number of universities and research centers
- ✓ Spain has a renowned network of top hospitals and KOLs
- ✓ Technology transfer offices are now ready to transfer innovation
- ✓ Investment opportunities from academia in Spain remain untapped

However, as a country…

05 Food for thought

...

- ✓ We should further develop the mechanisms to identify and foster those opportunities that are potentially transferable
- ✓ We should implement the right tools to link science with the market needs early on in the technology transfer process
- ✓ We should facilitate the involvement of early stage private investors and company builders and understand their needs