

A grayscale photograph of a person's hands in white gloves operating a microscope. A large, semi-transparent pink overlay covers the left side of the image, with two thin white diagonal lines crossing it. The text is positioned on the right side of the image.

Life sciences and healthcare in Catalonia

December 2020

Sector snapshot

ACCIÓ



**Generalitat
de Catalunya**

Life sciences and healthcare in Catalonia: Sector Snapshot

ACCIÓ
Government of Catalonia



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Collaboration
Biocat

Barcelona, December 2020



1. The life sciences and healthcare industry



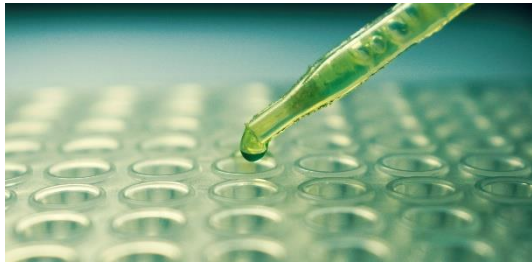
2. The life sciences and healthcare industry in Catalonia



3. Opportunities in the life sciences and healthcare industry



1. The life sciences and healthcare industry



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Life sciences and healthcare industry definition

The life sciences and healthcare industry can be defined as the **combination of 4 main subsectors**.



Pharmaceutical

Pharmaceuticals are commercial enterprises that research, develop, produce and sell drugs and other medicines. These enterprises are typically large and deal both in branded and generic compounds.



Medtech

Medtech companies, also known as **medical devices** companies, are involved in research, development, production and marketing of systems and technologies for medical applications in humans and animals.



Biotechnology

Biotechnology companies are those that employ living organisms or biological substances for the development of products and services with applications in numerous fields such as waste management, food processing, agriculture and pharmaceuticals.



Digital Health

Digital health refers to tools and services using information and communication technologies (ICTs) that can improve prevention, diagnosis, treatment, monitoring and management. It includes information and data sharing between patients and health service providers, hospitals, health professionals and health information networks.

Source: KPMG & European Commission

The global life sciences and healthcare industry

Pharmaceutical

- The production of the pharmaceutical industry rose to **275,000 M€** in 2019, with a **growth of 5.51%** over the previous year and **27.38% compared to 2010**.
- The sector has invested **37,500 M€** in **R&D** in Europe, becoming the leading sector in R&D expenditure.
- Europe has a **positive balance of 122,031 M€**, led by Switzerland, Ireland and Germany.
- **Spain** ranks **5th** in sales and in job creation, and **6th** in Pharma production in Europe.

Biotechnology

- The **slow but constant growth** of biotech companies worldwide will continue due to the greater global investment in technology, the ageing population and the personalization of cures.
- European companies had demonstrated **moderate growth** during the beginnings of the actual decade.
- The biotechnology sector accounts for **4.2% of Spain's total GDP**. The companies have increased their **R&D expenditure** by 2.4% with a total figure of **617 M€**.

Medtech

- The global market for medical products and devices has been valued at **\$425.5 trillion** in 2018.
- Medical products and devices are expected to **grow to \$612.7 trillion by 2025**.
- **Spain** has a **strong public health system** and **2,400M€** of exports, **74%** directed to European markets.

Digital health

- A **dramatic increase** in this subsector's worldwide **turnover** is expected due to new technological infrastructures that will boost telemedicine and mobile health.
- **Spain** has been a **pioneer** in the inclusion of digital health technologies.

Source: 2020 Global life sciences outlook, Deloitte. The Pharmaceutical Industry in Figures, 2020, European Federation of Pharmaceutical Industries and Associations. Spain for Biotechnology, Pharmacy and life sciences, 2019, ICEX



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The Catalan life sciences and healthcare industry



1,200
COMPANIES (2019)

- 311** biotech companies
- 198** professional services and consulting companies
- 193** medtech companies
- 156** providers and distributors
- 180** digital health companies
- 124** pharma companies
- 43** investing organizations

The company **creation rate** is about **1 new company per week**.

89 research institutions: research centres, university hospitals, large research infrastructures, technology centres and science and technology parks with life sciences and healthcare and health activities.



19,767 M€
TURNOVER (2018)

3.5% of Catalan GDP.

Pharma companies represent **47%** of total turnover.

Turnover is **34,240 M€** (7.3% of Catalan GDP) when **healthcare services companies** are included.



55,440
EMPLOYEES (2018)

230,000 people are employed by the sector when **healthcare services companies** are included (7% of the working population in Catalonia).

Source: ACCIÓ based on Scaling-up the BioRegion of Catalonia (2020) by Biocat

Catalonia, an economy with a strong life sciences and healthcare base

Pharmaceutical



Biotechnology



Medical Devices



Digital Health



Note: This is a partial illustrative representation of the main companies that are part of this ecosystem

A diverse support ecosystem to support the life sciences and healthcare sector

Universities



University hospitals



Hospital research institutes



Conferences and fairs



Clusters, associations and agencies



Note: This is a partial illustrative representation of the main companies that are part of this ecosystem

Source: ACCIÓ based on Biocat (2020)

A booming start-up ecosystem

More than 1,500 start-ups are located in Catalonia



- 43% of start-ups have e-commerce and the market as a business model; 29% use software as a service and 25% use development and manufacturing.
- 3 out of 4 Catalan start-ups have obtained financial support.
- 16,900 jobs related to Catalan start-ups.
- The technologies that attract the most investors are ICT (23%), big data (16%) and cloud computing (13%).

- The proliferation of life sciences and healthcare related companies in Catalonia is mainly due to the creation of new start-ups. The most important growth has been in biotech and medtech start-ups.

Medtech

Pharma and Biotech

Note: This is a partial illustrative representation of the main companies that are part of this ecosystem

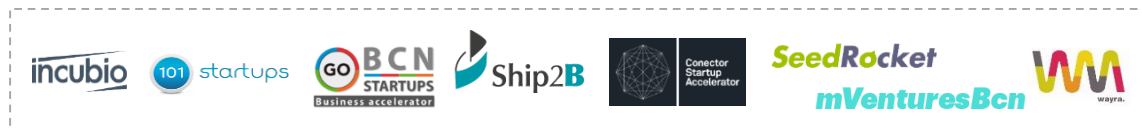
Source: ACCIÓ based on Biocat (2020). Barcelona & Catalonia Startup Hub, 2018

Business accelerators and support programmes

Life sciences and healthcare accelerators



Other top accelerators & incubators



Crowdfunding platforms



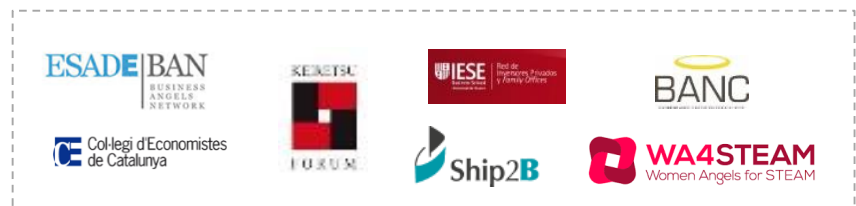
Local venture capital funds



International venture capital funds & investors



Business Angels



Note: This is a partial illustrative representation of the main companies that are part of this ecosystem

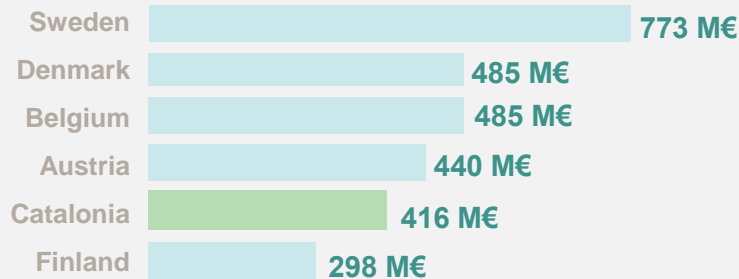
Source: ACCIÓ

Research and innovation: key traits of the Catalan business culture

One of the leading research hubs in Europe

- Catalan institutions and companies are highly **competitive** in **attracting EU funds** that support research and innovation.
- Catalan researchers have received **113 grants** from the **European Research Council (ERC)**, more than almost any other country in Europe, including Finland and Denmark.

Top 6 countries with more R+D financing from the EU (2014-2019)



The main driver of innovation in Spain

- Catalonia represents more than **40% of the Spanish innovation capacity** in life sciences and healthcare.
- From 2015 to 2018 it **has multiplied by three** the number of **patent families** (EP + US + WO).

81
Patent applications
▲ 78.1% 2015-2018

Main patent applicants in Catalonia

Universities and research centres **38%**



Companies **62%**



Source: ACCIÓ based on Biocat (2020)

High quality research in life sciences and healthcare

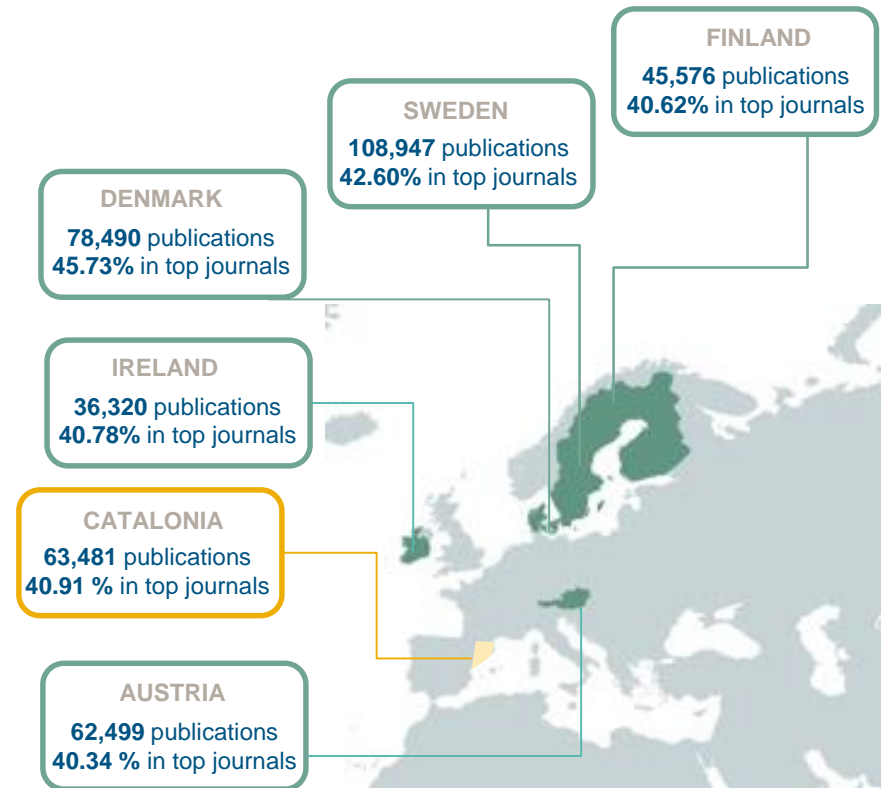
- Catalan companies have **41 drugs** and **therapies** in **clinic development**. The main research areas covered are:

Main areas of clinical development in Catalonia

Oncology	Pain and nephrology
Central nervous system	Vaccines & infectious diseases
Diabetes and inflammation	Cardiovascular and blood
Dermatology	Fertility
Orphan and rare diseases	Ophthalmology

- Catalonia also outperforms in **number of publications** in the biomedical arena. In fact, **scientific production has nearly quadrupled over the past 20 years** and **one out of six (16.5%) Catalan biomedical publications are among the most cited papers in the world**.

life sciences and healthcare scientific publications (2014-2019)



Source: ACCIÓ based on Biocat (2020)

Catalan companies take on the world

6,855 M€

Exports in life sciences and healthcare products (2019)

50.1% vs Spain
Catalonia is the main exporting region of life sciences and healthcare products in Spain

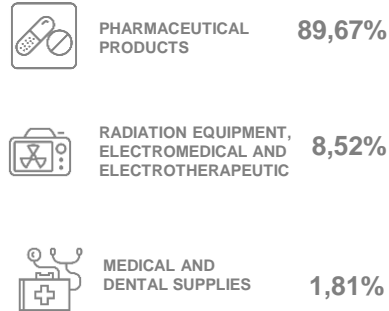
7.96%
of the total Catalan exports

788

Regular exporting companies of life sciences and healthcare products (2019)

43.4%
of the total number of life sciences and healthcare exporting companies in Spain

FIRST LEVEL EXPORTED PRODUCTS



SOME OF THE MOST IMPORTANT REGULAR EXPORTERS



Principal destinations of Catalan Life Science and Healthcare exports



551 foreign subsidiaries of Catalan companies in the life sciences and healthcare sector



Note: partial illustrative sample of companies sorted by turnover of the parent companies

Note: the regular exporters are those companies that have exported during the last four consecutive years.

Source: DataComex ICEX CNAE: 21 Manufacturing of pharmaceutical products, 325 Manufacturing of medical and dental instruments, 266 Manufacturing of radiation, electromedical and electrotherapeutic equipment, Directory of exporting Catalan companies and Catalan companies abroad.

Catalonia, leading destination for life sciences and healthcare FDI

<p>38 FDI projects</p> <p>▲ 28.9% 2010-2014</p>	<p>572.7 Invested capital (M€)</p> <p>▲ 30.4% 2010-2014</p>	<p>2,304 Created jobs</p> <p>▲ 53.4% 2010-2014</p>
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Between 2015 and 2019, Catalonia has been the first FDI technological destination in Spain, representing:

- 34.8% of the FDI projects.
- 36.7% of the invested capital.
- 31.1% of the created jobs.

- Catalonia is the **9th region of Western Europe** in number of projects, the **11th in capital investment** and the **5th in created jobs** in the life sciences and healthcare industry.
- FDI in Catalonia represents **3.1% of the projects**, **2.2% of the capital investment**, and **4.2% of the created jobs in Western Europe**.

Main countries and regions by investment origin



	Projects	Capital (M€)	Jobs
Pharmaceutical	17	261	761
Medtech	10	148	274
Biotechnology	5	52	187
Digital health	10	148	1.082

Top 20 companies with most life sciences and healthcare FDI in Catalonia (2015-2019)

Source: ACCIÓ based on fDi Markets, 2015 -2019

An attractive location for people and businesses

Barcelona, talent attraction

One of the best locations in the world to live and work. A magnet for young professionals and researchers in Europe.

1st Science City in the south of Europe

Top 200 Science Cities, Nature Index, 2018

2nd in the European digital cities ranking

Bloom consulting, 2017

3rd best European city

Resonance Consulting, 2018

4th European region in number of qualified workers in scientific and technologic sectors

HRST by category and NUTS 2 regions, Eurostat, 2018

15th city in the world in scientific production

Cities of Knowledge, UPC, 2018

The *Clínic Hospital*, is the **21st** hospital in the world

World's best hospitals 2020, Neeweek, 2020



Competitive costs

Barcelona has the **lowest operative costs** of the 10 main European cities in the sector: **3.38M€ annually**. A 35.42% lower than the mean, of 5,24M€ annually.

Barcelona also has the **most competitive labour costs**, with first level professionals from all around the world.

Annual operative costs of a life sciences and healthcare R&D plant by cities, in M€



A privileged destination for clinical trials

Catalonia is in the **world top 15** and in the **European top 10** in number of active clinical trials in 2019, many of them in collaboration with multinational pharmaceutical companies.

Concretely, Catalonia is the **13th region** in number of active clinical trials in the world, above countries like Switzerland and Denmark.

Spain, with a **45.7%** of the clinical trials being conducted in Catalonia, occupies the **second place** in the ranking of countries with more clinical trials in Europe.

Pharmaceutical multinationals that conduct clinical trials in Catalonia



Source: ACCIÓ based on Biocat (2020)

Catalan life science and healthcare sector response to the Covid-19 crisis

The Catalan **life sciences and healthcare** sector, one of the **most dynamic worldwide**, is a clear example of unity and collaboration at work to face the Covid-19 crisis.

Covid-19 impact

- Currently, scientists all around the world are looking for a **vaccine** against Covid-19, and the **relevance of the health services and medical research** has become clearer than ever. The coronavirus crisis has put an unprecedented pressure on the health systems around the world and governments must provide any available resources from the public and private health service, as well as providers to deal with the health crisis.
- **Biotechnology** is the hottest industry at the moment. The global rush to find a vaccine is pouring hundreds of millions of economic resources into companies in this sector.

AREAS OF RESPONSE



Health products



Protection material



Drug studies



Diagnostic tests



Disinfection systems



e-Health platforms

The main Catalan companies



Source: ACCIÓ, La Vanguardia, AECOC, Público, press releases



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Technological and business opportunities in Catalonia

3D printing



5G connectivity



Big Data



Biotechnology



Blockchain



Quantum sciences



Advanced drug development



Drones



Photonics



Artificial intelligence



Internet of Things



Nanotechnology



Neuroscience



Augmented reality



Robotics



Connected vehicle



Source: ACCIÓ

International market opportunities



Source: Global trade mapping, 2020 by ACCIÓ

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Take a look at the report:

<http://catalonia.com/.content/documents/life-sciences-in-catalonia.pdf>

More information about the sector and related news:

<http://catalonia.com/trade-with-catalonia/life-sciences.jsp>



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