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2025 AseBio Report

Biotech Act:
an opportunity for Spanish biotechnology.

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Cristina Nadal, AseBio Chairwoman

2025 was a pivotal year for European biotechnology. A year in which Europe began to accept something that our sector has long been advocating: biotechnology is not merely a field of scientific innovation. It is a **strategic asset for the continent's industrial competitiveness, technological autonomy, defence and economic resilience**.

Reports by **Mario Draghi** and **Enrico Letta** marked a turning point in this debate. Both agree on a clear diagnosis: Europe needs to reindustrialise, strengthen its internal market and create the necessary conditions for its scientific excellence to be translated into business and industrial leadership. **Biotechnology plays a central role in this transformation** given its potential for transversal impact in health, food, sustainability, energy and security.

In this context, the **Biotech Act** is much more than just a new regulatory initiative. It is explicit acknowledgement that **Europe needs a coordinated, ambitious strategy to drive forward a key area for its future**.

Over the past year, we have seen this shift in perspective. In May, the European Commission launched the first public consultation to identify the obstacles that hinder the sector's competitiveness. In August, it expanded this analysis with a new consultation focusing on regulatory barriers, access to funding and challenges in biomanufacturing, talent, data and artificial intelligence. In October, it set out a two-phase roadmap and, finally, in December, presented the **draft Biotech Act**, containing measures aimed at improving access to capital, strengthening industrial capacity, accelerating innovation, simplifying regulatory procedures and enhancing biosecurity.

At AseBio, we have played an active role in this process, conveying the perspective and real needs of the Spanish biotechnology ecosystem to the European institutions. We have advocated for more accessible funding that enables companies to scale up without being forced to look outside Europe for opportunities they cannot find here; a more coherent, harmonised, flexible regulatory framework; a firm commitment to scaling-up and biomanufacturing infrastructure; and an industrial policy that recognises that innovation ends not in the laboratory, but when it reaches the market and creates value.

Because **Spain has a great deal to contribute** in this new phase, and the data compiled in this AseBio report

prove it. Our country now has **more than 1,100 biotech companies** and **over 4,400 companies carrying out biotechnology-related activities**. In 2024, biotechnology companies invested **€1.46 billion in R&D**, consolidating this as one of the sectors with the highest level of investment in the country. In 2025, the sector saw **record investment, exceeding €400 million**.

Moreover, we are a **talent-intensive ecosystem**. Biotechnology continues to have the highest concentration of research staff of any industrial sector, with salaries almost double the national average and a **strong female presence**: women make up 59% of total employment in the sector and 29% of executive teams, well above the average for IBEX companies. We also continue to demonstrate scientific excellence: Spain is ranked **ninth in the world for scientific output in biotechnology** and third in quality.

The economic impact is equally significant. The biotechnology sector already accounts for **1.2% of the Spanish GDP**, generates **more than 158,000 jobs** and exceeds **€15.5 billion in production**.

These figures allow us to state with certainty that **Spain is not starting from scratch**. We have science, talent, innovative companies and a solid industrial base. But we also know that leadership is not guaranteed by skills alone: it requires **strategic vision, regulatory stability, access to funding and an environment that enables growth**.

The Biotech Act is a historic opportunity to move in the right direction. But its true impact will depend on our vision and ambition as a country, on the political and social support it secures, and the conviction and drive of the biotechnology ecosystem. Europe has taken an important first step, and Spain must now follow suit. It is time to ensure that this opportunity translates into real growth, innovation and strategic autonomy.

Here at AseBio, we will continue to work to make this happen.

Ion Arocena, AseBio CEO

In 2024, we anticipated that 2025 would be an intense year for **legislative activity**. And that is exactly what happened. In just one year, we took part in **nine consultation procedures on European legislation** and **six in Spain**, more than in 2023 and 2024 combined. This way, we ensured that the voice of the Spanish biotechnology sector is heard in the drafting of regulatory texts that will set the legal framework for the sector over the coming years.

In Europe, we were involved in the **Biotech Act**, the European initiative to get biotechnology to market faster; the **Critical Medicines Act**, which aims to ensure the supply of essential medicines in the EU; the **Life Sciences Strategy**, to allow Europe to remain competitive and attractive to investment in the health sector; the **Bioeconomy Strategy** to provide solutions for a circular and climate-neutral economy by boosting EU competitiveness; and consultations on **State Aid for companies in crisis** and the **General Block Exemption Regulation**, where we proposed amendments to the definition of the criterion for companies in crisis.

Nationally, we have been involved in the Draft Order on the **Common Portfolio of Public Health Services, the National Preparedness and Response Plan for Public Health emergencies**, the **Preliminary Draft of the Law on Digital Health**, which sets out the governance framework for the secondary use of health data; and in the **Deep Tech Strategy**, which aims to transform our country's scientific potential into technological leadership in the field of deep technologies. We also spearheaded the drafting of the **3rd Order on Deferral and instalments** for loan payments due under certain funding schemes, in order to provide our companies with some financial breathing room.

Moreover, 2025 was marked by geopolitical tensions arising from competition among the major powers and regional conflicts. In this new context for the sector, at AseBio we analysed **the role of biotechnology in security and defence**, and the **opportunities** that may arise for the sector in this new context.

We launched a new initiative, the **Biodesayunos de AseBio**, which allows us to engage with key stakeholders in the sector, such as the CDTI and the Ministries of Health, Industry, Economy and Digital Transformation. And we have achieved this with our members and the Board of Directors, conveying the sector's needs first-hand.

We succeeded in bringing **precision fermentation before the Congress of Deputies** with the aim of **developing science-based public policies** and, with our report on biotechnology applied to the green transition, we raised awareness of the nearly **600 solutions for a sustainable economy from our members**.

We ensured that the biotechnology sector's voice was represented on the Joint Committee for the **2024–2028 Spanish Pharmaceutical Industry Strategy**, where we have succeeded in establishing a specific workgroup on the Biotech Act.

Through our BIOSPAIN 2025 and BIOLATAM events, the sector internationalisation plan, our presence at major international events and our contribution to promoting the 2nd edition of the **Desafía Boston** programme organised by ICEX, we facilitated the **internationalisation of Spanish biotechnology**.

And we ended 2025 with the much-awaited **Biotech Act I**, the European Commission's initiative that, in the words of the **Health Commissioner**, is not just another strategic document, but rather **a competitiveness agenda through which Spain can position itself as a key pillar of European biotechnology investment.**

We strengthened our ability to exert influence by participating in high-level forums, such as the **National Forum of Emerging Companies**, the **Joint Committee on the Pharmaceutical Industry** and the **first NATO Biotech Conference**.

At AseBio, we will continue working closely with our members and key stakeholders in the ecosystem to ensure that the sector develops within a new, favourable framework that enables it to realise its full potential.

Introduction

The AseBio Report, considered the benchmark publication in the biotechnology sector since 2000, is published annually by the Spanish Bioindustry Association. Its mission is to analyse every area that makes up the context in which biotechnology is being developed in our country today, and how it is evolving.

This edition looks at a year, 2025, marked by the European Commission consultations and publication of the draft Biotech Act. So, this report also looks at the process the Biotech Act has undergone, culminating with publication of the draft regulation at the end of the year.

Plus, it analyses indicators on R&D investment, funding secured, economic impact, sector companies and ecosystem, talent, female representation in the sector, the sector's perception of its work environment, advances in biotechnology developments, how the sector collaborates, scientific and technological output, products and services launched to market, and how our companies are internationalising.

Content

The 2025 AseBio Report has 11 sections. Each of its chapters takes a closer look at the most important issues affecting the Spanish biotechnology sector:

1. **Introduction and executive summary:** introduce the Report, its scope and main goals, plus a brief summary of its overall content.
2. **R&D investment** (chapter 1): covers R&D investment in the sector, how it has evolved and a comparison to other sectors.
3. **Funding** (chapter 2): describes the main financial operations, venture capital activity in 2025 and CDTI support for the sector.
4. **Talent and diversity** (chapter 3): shows the number of students enrolled in biotechnology, researchers in the sector and female participation in the sector.
5. **Business fabric** (chapter 4): analyses the ecosystem that makes up the sector, number of companies and how it has evolved, as well as what these companies are like and where they are located.
6. **Environment** (chapter 5): analyses the Biotech Act and how the biotechnology sector sees its environment.
7. **Results** (chapter 6): includes scientific publications, how the sector has patented, the main advances in biotechnology and products and services launched to market.
8. **Collaboration and internationalisation** (chapter 7): includes the partnerships established in the sector in 2025 and where companies have internationalised.
9. **Impact** (chapter 8): analyses the biotechnology sector's impact on the economy, employment and taxes.
10. **Who's who**: features information on members of the AseBio Board of Directors, work committees and members.
11. **Methodology**: explains the methodology used to compile the 2025 AseBio Report.

Acknowledgements

AseBio would like to thank all our collaborators for their support. Without their help, this report would not have been possible. And, especially:

MSD, our main collaborator, and 3PBiovian, Amgen, AstraZeneca, BioSerentia, BTI, Cesif, Genesis, Hipra, Minoryx, Oryzon, Madrid Science Park, Promega Biotech and VIVEbiotech.

All our members who contributed the information needed to draft the contents.

The National Statistics Institute (INE) and the Economic Forecasting Centre (CEPREDE) for their help in compiling the statistics on the sector.

The Department of Studies and Indicators at the Spanish Foundation for Science and Technology (FECYT) for the information contributed for the section on scientific output.

The Madrid Science Park and ClarkeModet for their analysis of patents applied for and granted in 2025.

All the organisations that helped identify companies established in 2025.

The Centre for the Development of Industrial Technology (CDTI) and the National Innovation Company (ENISA) for their collaboration on the chapter on funding.

Executive summary

R&D investment

Biotechnology companies invested €1.46 billion in R&D in 2024.

This €1.46 billion makes up 6% of all investment in Spain, and biotech firms executed 60% of it, or €882.7 million.

This R&D investment comes 67% from the biotech firms' own funds, with a substantial increase in investment in physical facilities.

The biotechnology sector is now ranked third in R&D investment intensity, surpassed only by R&D services and education.

Funding

The biotech sector doubled investment secured, over €400 million.

In 2025, the sector broke its all-time record for investment raised, exceeding €400 million in 59 transactions.

International investors and CDTI Innvierte played a key role in this investment. CDTI Innvierte took part in operations with 10 companies, contributing €47.2 million, while the investment raised through capital increases involving international investors totalled €302 million in 12 operations.

Biotech firms raised €3.6 million in crowdfunding and €24 million through the European Investment Bank and ENISA.

Talent and diversity

Biotech firms still have more researchers than any other sector and 59% of employees are women.

There were roughly 10,000 students enrolled in biotechnology studies the past academic year, and 62% of them were women. Biotechnology remained among the degrees that require the highest marks on university entrance exams in 2025.

The biotech sector still has the highest percentage of researchers to total employees of any industrial sector, 16%, and the average salary per employee is nearly double the national average.

Biotech companies were ranked third again in terms of women in R&D activities, where they make up 61% of all employees in these positions.

Women make up 29% of executive teams at biotech firms, well above the average for IBEX-35 companies (21.2%).

Business fabric

There are now more than 1,100 biotech companies in the sector.

The number of companies that carry out biotechnology activities rose 6% to 4,465 businesses.

Of the 1,100 biotech firms, 52% are micro-SMEs with fewer than 10 employees and 43.6% are SMEs.

Among biotech companies, 55.5% focus on human health, 32.6% on food applications, 16.1% on animal health and aquaculture, 14% on agriculture and forestry, 13.1% on the environment and 9.8% on industrial biotechnology.

By autonomous communities, Catalonia leads the ranking as the region with the most companies and turnover, followed by the Community of Madrid. Furthermore, Catalonia, the Community of Madrid and Andalusia stand out as the autonomous communities with the most biotechnology-related facilities.

Environment

The draft Biotech Act proposes to increase funding, boost industrial capacity and competitiveness, accelerate innovation and reduce regulatory barriers.

This report analyses how the European Commission consultation process unfolded and, following the publication of the draft Biotech Act in December 2025, the most important elements that will have the greatest impact on the sector once the Regulation is enacted.

Public opinion of biotechnology was the most highly rated factor and the regulatory framework, the lowest.

Results

Spanish scientific output and innovation are excellent, and the sector secures patents internationally.

In 2024, scientific output in biotechnology made up 1% of all scientific output in Spain, with 1,192 papers, and 2.5% of global scientific output in this area.

Spain remains ranked ninth in the world in number of papers in biotechnology and third in quality.

The biotechnology sector patents in Europe and internationally. Patents through PCT and the European Patent Office make up 82% of all patent applications.

In 2025, we identified 93 new products or services launched to market by AseBio member companies.

Collaboration and internationalisation

The sector forged 266 partnerships, mainly for R&D.

Biotech firms forged 266 partnerships and 168 of them were with research centres or foundations, 50 with other biotech firms and 40 with other types of companies.

Regarding the purpose of the collaboration, 175 of the 266 partnerships focus on R&D, 67 are aimed at carrying out clinical development or field trials, 15 relate to distribution or marketing partnerships, and 4% are partnerships focused on regulatory matters or production.

In terms of country of origin of the entities they partner with, Spain leads the ranking with 195, followed by European companies with 31 and US organisations with 12.

AseBio member companies increased internationalisation 19%.

The total number of subsidiaries of our members outside of Spain in 2025 was 280, 45 more than in 2024, consolidating their growth beyond the national market.

Impact

Biotech firms contribute 1.2% of the GDP and over 158,000 jobs.

The joint activity of biotech companies generated over €13.271 billion in income, which is 1.2% of the Spanish GDP.

Total tax revenue was €5.504 billion, or 0.5% of the GDP, and these companies employed 158,366 people, which was 0.78% of all employment.

The joint turnover for biotech companies was 1% of the GDP in 2024.

In 2024, net growth in production at biotech firms rose more than 5%, or over €15.5 billion.

R&D investment

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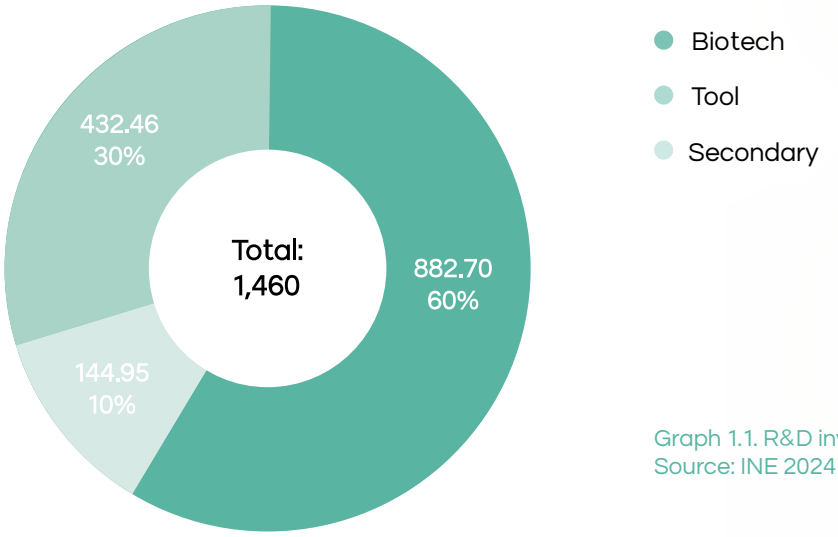
01. R&D investment

Biotechnology companies invested €1.46 billion in R&D in 2024.

The biotechnology business sector, meaning companies with biotechnology as their main (biotech firms) or secondary activity, or that use it as a production tool, continued increasing their stake in total investment in R&D. In 2024, this investment totalled over €1.46 billion, which was 6% of national R&D investment. Biotech firms execute 60% of all investment by companies with biotechnology activity. This increase in R&D expenditure was particularly noteworthy among companies that use biotechnology as a production tool.



Graph 1.1. R&D investment in biotechnology (€ millions).
Source: INE 2024 Survey on Biotechnology Use.

R&D investment comes 67% from the biotech companies' own funds, with a substantial increase in investment in physical facilities.

Virtually all expenditure categories increased year-on-year, except for capital expenditure on equipment and software, which dropped, particularly among biotech firms. Conversely, there was a very significant increase in capital expenditure on physical facilities, such as land and buildings, showing the sector's growing need for capacity and infrastructure.

Internal R&D expenditure remains similar at the different types of companies involved in biotechnology activities: biotech firms, companies that use biotechnology as a tool in their production processes and ones with biotechnology as a secondary activity. 92% of R&D investment goes to paying research and technical staff and operating expenses. The remaining 8% is allocated to investment expenses. These figures follow the same pattern as the previous year.

At biotech firms, 31% of R&D investment goes to paying researchers, 16% to technicians and assistants, and 45% to other current expenses. This breakdown varies slightly from the previous year.

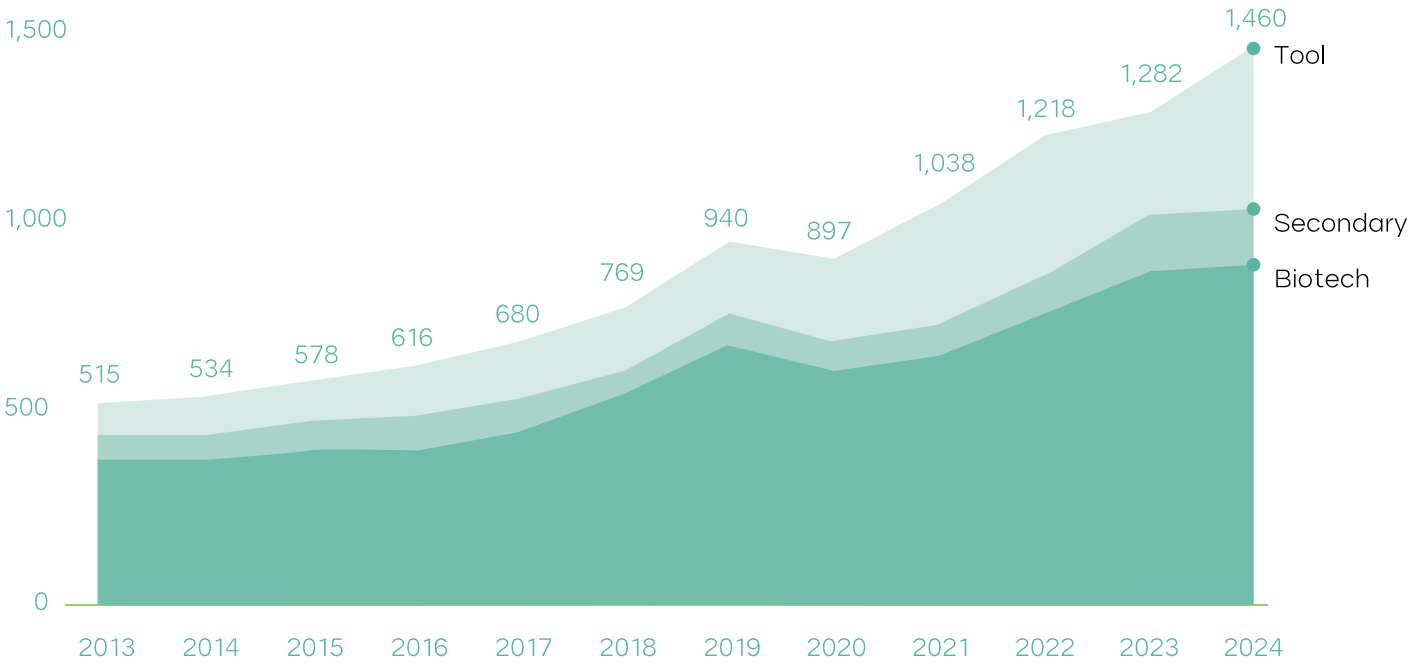
In terms of the origin of the funds, there have been some small changes. At companies that use biotechnology as a tool in their processes, 78% comes from their own funds, while this figure is 67% for biotech firms and 61% for companies with biotechnology as a secondary activity. Companies with biotechnology as a secondary activity received 18% of all funds from the public administration, biotech firms saw 11% and companies using biotechnology as a tool in their production processes got 9%. Finally, both at biotech firms and companies with biotechnology as a secondary activity, 16% of R&D investment is from the business sector, while for companies that use it as a production tool it is 10%.

	Biotech	Secondary	Tool	Biotechnology total
Internal R&D expenditure in biotechnology	**882.70**	**144.95**	**432.46**	**1,460.10**
A) By nature of the expenditure				
Operating expenses	809.48	135.32	399.88	1,344.68
-Paying researchers	273.37	64.39	132.57	470.33
-Paying technicians and assistants	141.36	22.72	94.00	258.07
-Other operating expenses	394.76	48.22	173.31	616.28
Capital expenditures	73.21	9.63	32.58	115.42
-Land and buildings	12.46	1.27	8.14	21.87
-Equipment and instruments	29.22	6.46	18.87	54.55
-Acquisition of specific R&D software	2.81	0.60	1.37	4.78
-Other intellectual property products specifically for R&D	28.73	1.30	4.20	34.22
B) By source of funds				
-Internal funds	587.40	87.96	335.32	1,010.67
-Funds from the business sector	141.25	23.49	42.41	207.15
-Funds from the public administration sector	95.20	25.99	36.96	158.15
-Funds from the higher education sector	0.51	0	0.10	0.61
-Funds from private non-profit institutions	8.76	0.04	1.03	9.83
-Funds from the rest of the world	49.58	7.48	16.63	73.68

Table 1.1. R&D Investment in 2024 by nature of expenditure and source of funds (€ millions). Source: INE 2024 Survey on Biotechnology Use.

The biotech sector saw a 14% increase in R&D investment.

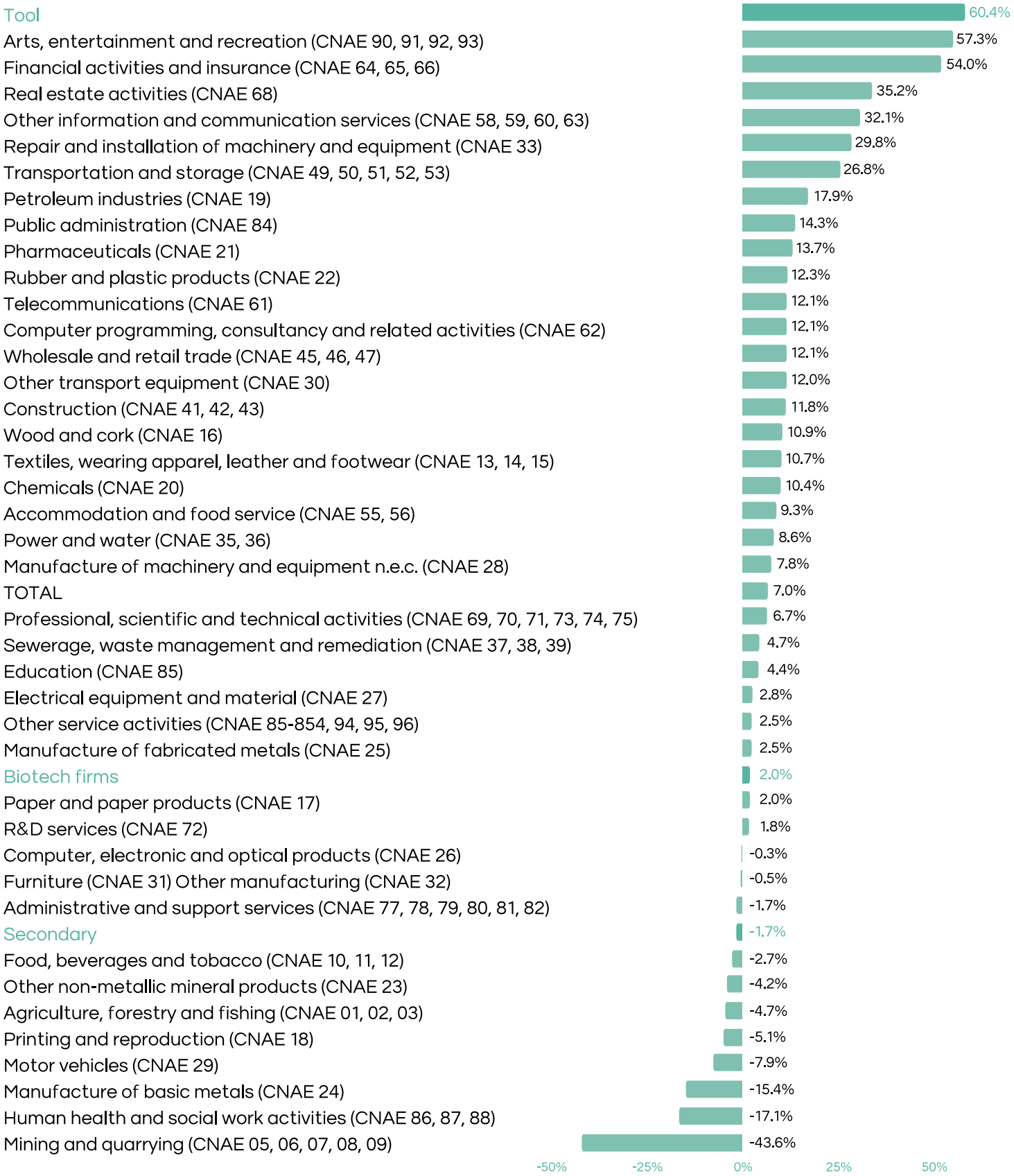
In 2024, there was a significant upturn in R&D investment by biotechnology companies, which increased their R&D spending by 14%, or €178 million, following the slowdown seen in the previous period. This increase in R&D investment was concentrated in the segment of companies that use biotechnology as a production tool, which increased investment by 60%, or €163 million. R&D investment by biotech firms rose slightly, up 2%, or €18 million, while it dropped 2% at companies with biotechnology as a secondary activity.



Graph 1.2. Evolution of R&D expenditure (€ millions) 2013-2024. Source: INE Survey on Biotechnology Use.

Graph 1.3 shows that the growth rate of total R&D investment across the various sectors of the Spanish economy dropped slightly compared with the previous year, to around 7% compared to 15.9% in 2023. This dip was primarily due to the injection of European investment through the Next Generation funds in previous years.

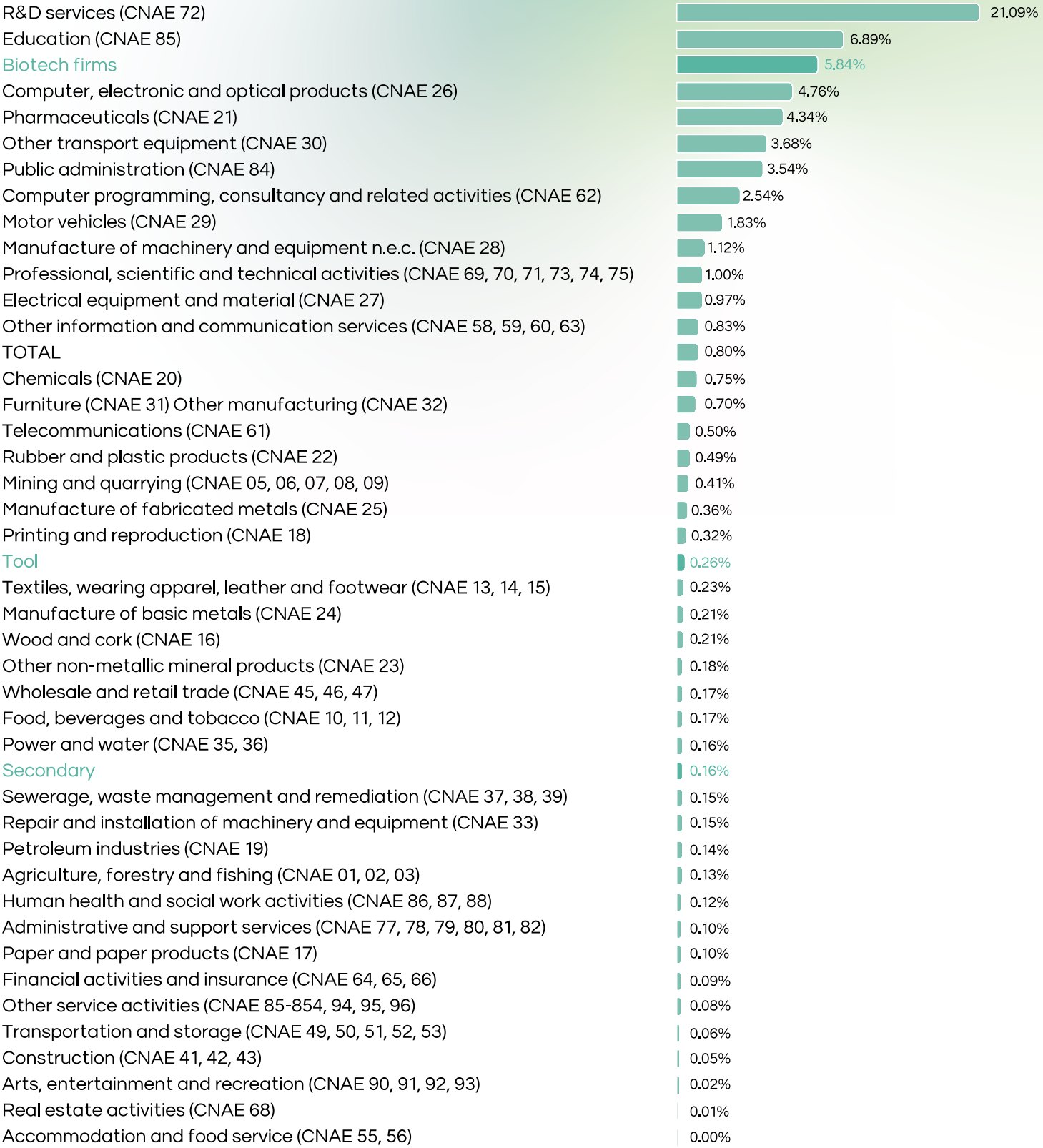
Against this backdrop of more moderate growth of R&D spending, certain activities —including companies that use biotechnology as a production tool, the financial sector and the arts— continued to post strong increases. Biotech firms, which continue to be one of the biggest spenders in terms of R&D as a percentage of production, showed 2% growth, which is below the average of 7%. Those with a secondary focus saw a slight decrease in their expenditure compared to the previous year.



Graph 1.3. Growth in R&D investment in 2024 (year-on-year growth rate). Source: Compiled internally from INE 2024 Survey on Biotechnology Use and Statistics on R&D activities.

Biotech firms are now ranked third in R&D investment.

Biotech firms continue to climb the rankings and are now third among sectors with the highest R&D investment intensity relative to output, at 5.84%. This time, only R&D services and Education are ranked above them (graph 1.4).



Graph 1.4. R&D investment intensity in 2024 (percentage of production). Source: Compiled internally from INE 2024 Survey on Biotechnology Use and Statistics on R&D activities.

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Cristina Nadal Sanmartín,
Executive Director Government
Affairs, MSD Spain

Biotech Act I: an opportunity for Europe to regain its leadership in biotechnology innovation

Europe has a lot at stake in the coming decade. The current geopolitical context highlights increasingly intense competition for economic and technological leadership. The United States and China have steadily increased their investment in R&D, venture capital and manufacturing capacity, which has led to a loss of competitiveness for the European Union in key areas such as biotechnology. Despite having a solid science base, it does not always translate into commercially viable products or large-scale manufacturing. As a result, European investment in healthcare biotechnology venture capital makes up just 7% of the global total, while its share of clinical trials has fallen from 22% in 2013 to 12% in 2023.

Supply chain disruptions during the pandemic and recent geopolitical tensions have highlighted the vulnerability external dependence poses for producing medicines and critical raw materials. In response to this, Biotech Act I, presented by the European Commission on 16 December, aims to support a strategic sector, accelerate biotechnology R&D&I, improve industrial autonomy and attract investment to make up ground in clinical research and biomanufacturing. This is a positive, necessary step towards strengthening European biopharmaceutical innovation, particularly given the limited ambition shown in the general overhaul of pharmaceutical legislation. This initiative offers a real opportunity to introduce incentives for industrial property rights that will safeguard innovation and enable Europe to regain its leadership.

One of the most significant measures is cutting approval times for clinical trials to 75 days, with the aim of making Europe a more attractive location for trials on innovative medicines and multinational trials in health emergencies. Speeding up these processes is essential for an EU that has lost half of its global share of clinical trials over the past decade.

Strengthening industrial property rights protection could be a significant lever to enhance Europe's appeal in the field of pharmaceutical R&D. However, focusing application on a limited number of products may undermine its real impact, excluding key biotechnological advances and discouraging investment in areas that are critical to Europe's healthcare, industrial and economic future.

Furthermore, the regulation proposes increasing manufacturing capacity through regulatory, financial and administrative incentives that require industrial presence or processes carried out on European soil. This strategy can improve strategic autonomy and resilience, but if implemented without due balance, it may discourage investment, increase costs or reduce flexibility.

Furthermore, the launch of an EU pilot programme for investment in healthcare biotechnology, in partnership with the European Investment Bank, is a step in the right direction towards helping to retain and develop European SMEs, transforming European academic excellence into solutions for patients. However, its impact will depend on whether it can consolidate and scale up over time.

Spain has already solved part of the puzzle: in recent years, it has established itself as a European leader in clinical trials. This leadership is underpinned by the strength of the National Health System, the excellence of healthcare professionals and the strong performance of the Spanish Agency of Medicines and Medical Devices (AEMPS). For MSD, Spain is a key country for clinical research: it takes part in roughly 80% of the company's clinical trials worldwide and is the leading European subsidiary in number of trials and patients.

At MSD, we want to keep helping make Europe and Spain more competitive. Bioindustrial production is key to this effort. Our animal production plant in Salamanca is an example of how to ensure local production capacity, build resilience into supply chains and reduce foreign dependence. Furthermore, it is one of our key strategic commitments to R&D&I in animal health, with investments in technology, such as SPHEREON®, that boost productivity and reduce environmental impact.

We are fully aware that scientific excellence only creates value when translated into innovation that reaches the market. Fundación MEDINA, established through a public-private partnership between the Junta de Andalucía, MSD and the University of Granada, is an example of how the combination of world-class science, facilities and talent can accelerate translational research and turn knowledge into new treatments that have a real impact on health.

Economy, science and health make better progress when they work together. If implemented ambitiously with the whole ecosystem involved, Biotech Act I could restore Europe's, and Spain's, capacity to transform its research excellence into biomedical innovation, generate healthcare solutions with a real impact, boost the economy and strengthen autonomy in an increasingly competitive world.

Branded content

Marta Moreno, Corporate Affairs & Market Access Vice-president, AstraZeneca Spain

Turning biomedical innovation into a competitive advantage for Europe and Spain

Europe is at a turning point. In a fragmented geopolitical landscape, with pressures on supply chains and growing competition for talent, investment and industrial capacity, biotechnology is emerging as a key driver of competitiveness, resilience and strategic autonomy.

In this context, the draft Biotech Act is a significant step towards strengthening Europe's role in biomedical innovation. This initiative brings together science, industry and production capacity, with the aim of transforming knowledge into real solutions for patients and into economic and social value.

Europe boasts scientific excellence, industrial capabilities and a solid regulatory history, but it needs to translate this potential into investment, scale-up and early access to innovation.

In this regard, a recent analysis commissioned by EFPIA and carried out by the consultancy firm Charles River Associates estimates that Europe could generate more than €105 billion in additional investment over the next decade if it narrows the competitiveness gap. This initiative would promote both job creation and patient access to innovative treatments.

Spain is in a particularly favourable position to contribute to this European ambition. In recent years, it has proved to be a magnet for investment, talent and innovation in health. The Spanish pharmaceutical industry spends over €1.5 billion a year on R&D, with 45% of that investment being channelled into collaborations with hospitals, universities and research centres. Furthermore, the sector generates more than €27 billion, or 1.9% of national GDP, and strengthens Spain's position in the global race for biomedical innovation.

Spain's leadership in clinical trials is a strategic asset. Clinical trials strengthen the knowledge society, drive technological development, attract high value-added investment, create skilled jobs and, above all, offer many patients early access to innovative treatment options. Furthermore, they are based on a particularly valuable model that fosters collaboration among the healthcare system, research centres, professionals and industry.

At AstraZeneca, we see the impact of this model every day. Spain is a key country in our global strategy, with more than 2,700 employees and 424 research projects in 2025, of which 260 were clinical trials involving more than 16,000 patients. Public-private partnership is key, with innovation understood as a shared effort to speed up the delivery of life-changing solutions.

On top of this solid research foundation, a technological transformation is already redefining the sector. Artificial intelligence, data science and other deep tech technologies are no longer just a promise for the future; they are now tools that are revolutionising drug discovery, trial design, biomarker identification and precision medicine.

At AstraZeneca, AI and data science are already being used in 90% of our small-molecule programmes in clinical development. This technological integration allows us to conduct better research, make more precise decisions and move more quickly towards innovative treatments.

The AstraZeneca Global Hub in Barcelona is a testament to that commitment. Founded in 2023, it combines biomedicine, data science, technology and commercial innovation in a model that goes beyond traditional R&D. It employs more than 1,600 professionals, has a planned investment of €1.3 billion through 2027 and aims to become one of Europe's leading centres of clinical excellence and innovation. Its growth reflects the capacity of Catalonia and Spain to become strategic hubs for European biomedical innovation.

The Biotech Act opens up a discussion about the kind of Europe we want to build. A Europe capable of competing, attracting investment, advancing science and turning innovation into health, jobs and prosperity. Spain has a great deal to contribute to that goal. The task now is to consolidate the progress made, strengthen what is already working and act ambitiously so that the next great wave of biotechnology innovation is also driven by Europe and, with it, by Spain.

Funding

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02. Funding

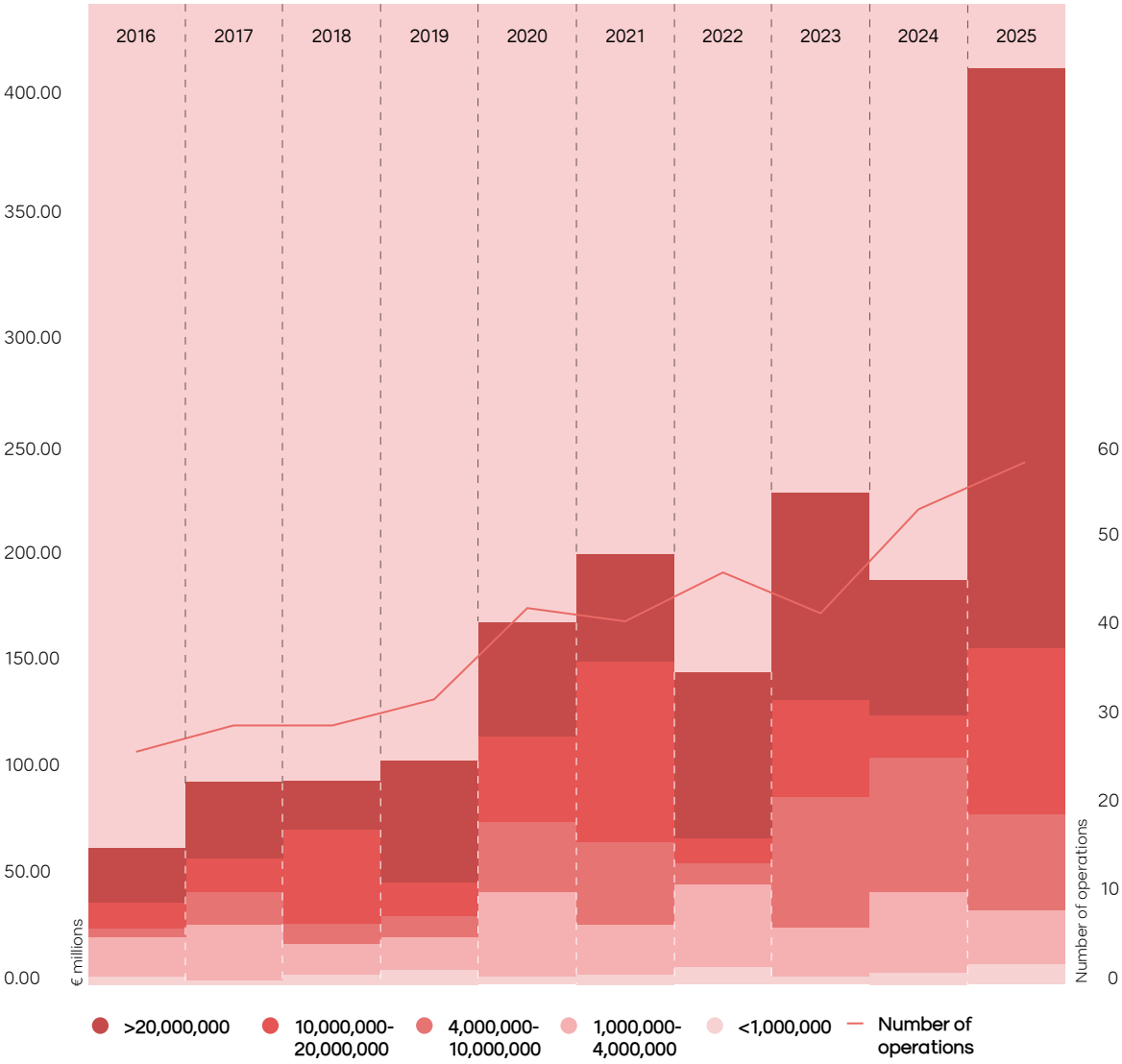
02.1 Private funding instruments.

The biotech sector has doubled investment raised, to over €400 million.

In 2025, the sector broke its all-time record for investment raised, exceeding €400 million in 59 transactions.

These figures show an unprecedented 125% increase in total funds raised, up from €181 million in 2024 to €408 million in 2025. Furthermore, there has been an 11% increase in the number of transactions, from 52 to 59. The average value of these 59 transactions was almost €7 million.

As shown in graph 2.1, transactions worth more than €20 million were responsible for the sharp rise in the figure this year and account for 67% of the total volume secured, up 361% from the previous year. Transactions worth between €10 million and €20 million made up 19% of the total funds raised, up 294% from 2024. Operations valued between €4 million and €10 million accounted for 10%, down 37% from 2024. Funding rounds of between €1 million and €4 million made up 7%, and the total amount raised dropped 25% from the previous year. Finally, transactions under €1 million accounted for 2% of the volume, although they are the most numerous, with 26 out of the 59 transactions. The total value of operations under €1 million rose 31% from 2024.



Graph 2.1. Evolution of private capital operations by operation size (2016–2025) Source: AseBio.

Below are some of the operations that raised the most investment.

The biggest deal of 2025 was secured by SpliceBio, which develops gene therapies using its protein splicing technology. It successfully closed a funding round of €119 million, co-led by EQT Life Sciences and Sanofi Ventures. Additionally, the round saw participation from the Roche Venture Fund and investors New Enterprise Associates, UCB Ventures, **Ysios Capital**, Gilde Healthcare, the Novartis Venture Fund and **Asabys Partners**. These funds will be allocated to development of SB-007, the company's gene therapy to treat Stargardt disease.

Another notable operation was secured by Deepull, which is developing diagnostic solutions to quickly identify pathogens in blood, with a total of €50 million. The transaction was led by Columbus Venture Partners, Panakès Partners and Mérieux Equity Partners, with the participation of Equity Partners, **Asabys Partners**, CDTI Innvierte, We Venture Capital, UI Investissement, Axis-ICO, Coller, Onefrom, Kurma Partners, Gesamo and CGHealth Ventures.

Quibim, a company specialising in the use of imaging biomarkers, closed a €50 million round of funding in a deal led by **Asabys** and Buenavista Equity Partners that also attracted new investors UI Investissement, GoHub Ventures and CDTI Innovación, as well as existing investors Amadeus Capital Partners, APEX Ventures, Partech, Adara Ventures, Leadwind, Build Collective and private investors.

Arthex Biotech raised a further €32 million in its Series B funding round, which began in 2023. For the operation in 2025, the investors included Bpifrance, which led the new round alongside existing investors AdBio Partners, CDTI Innovación, Columbus Venture Partners, Hadean Ventures, **Invivo Partners** and Sound Bioventures.

Through the **CDTI co-investment scheme, INNVIERTE**, which supports professional private investors in investment rounds, investing alongside them, CDTI invested €47.2 million in Arthex Biotech, OneChain Immunotherapeutics, Arrays4Cell, Bioflytech, Bioherent, Medical Plasmas, Atlas Molecular Pharma, Deepull, Universal Diagnostics and Nanoligent. Since its launch in 2019, the INNVIERTE co-investment instrument has invested in 40 biotech companies, with commitments totalling €162 million.

Organisation	Participating investors	Instrument	Total investment volume pledged (€)
Splicebio	EQT Life Sciences / Sanofi Ventures / Roche Venture Fund / New Enterprise Associates / UCB Ventures / Ysios Capital / Gilde Healthcare / Novartis Venture Fund / Asabys Partners	Capital increase	119,000,000
Deepull	Columbus Venture Partners / Panakès Partners / Mérieux Equity Partners / Asabys Partners / CDTI Innvierte / We Venture Capital / UI Investissement / Axis-ICO / Coller/ Onefrom/ Kurma Partners / Gesamo / CGHealth Ventures	Capital increase	51,033,734
Quibim	Asabys / Buenavista / UI Investissement / GoHub Ventures / CDTI Innvierte / Amadeus Capital Partners / APEX Ventures / Partech / Adara Ventures / Leadwind / Build Collective / Columbus Venture Partners / Private investors	Capital increase	51,030,737
Arthex Biotech	Bpifrance / AdBio Partners / CDTI Innovación / Columbus Venture Partners / EIC Fund / Hadean Ventures / Invivo partners / Sound Bioventures	Capital increase	32,594,889
Highlight Therapeutics	Buenavista Equity Partners / Columbus Venture Partners	Capital increase	15,000,000
Moa Foodtech	EIC Accelerator	Participation loan	12,500,000
Aortyx	Clave Capital / Ship2B Ventures / Nara Capital / EIC Fund / CDTI Innvierte / Business angels	Capital increase	13,800,000
Ona Therapeutics	Asabys Partners / Fund+ / CDTI Innvierte / Ysios / BPI France	Convertible loan	12,943,434
Anaconda Biomed	Ysios Capital / Asabys / CDTI Innvierte	Capital increase	12,500,000
Nanoligent	Inveready / CDTI Innvierte / Clave Capital / i&i Bio / Italian Angels for Growth / Avanteca,	Capital increase	12,000,000
Histocell	Current partners	Capital increase	7,200,000
Oriva Therapeutics	Asabys	Convertible loan	7,000,000
Integra Therapeutics	Columbus Venture Partners / CDTI Innvierte / ADBio / Takeda Ventures / Invivo Partners	Capital increase and convertible note	6,700,000
Orikine Bio	Asabys / AdBio partners / CDTI Innvierte	Capital increase	5,700,000
Tetraneuron	GIMIC Ventures / Family offices / Business angels	Capital increase	4,900,000
Advanthera Solutions	Columbus Venture Partners	Capital increase and convertible note	4,200,000
Bioflytech	Moira / CDTI Innvierte / Xesgalicia	Capital increase	4,000,000

Organisation	Participating investors	Instrument	Total investment volume pledged (€)
Ability Pharma	CTI Life Sciences / Inveready / Founders / Private investors	Capital increase	3,000,000
ZYMVOL	Faber Ventures / Elaia Partners/ Übermorgen Ventures	Capital increase	3,000,000
Allox	Asabys / CDTI Innvierte	Capital increase	2,600,000
Reveal Genomics	Lluís Prat / ADELMAR GESTIO S.L.	Convertible loan	2,250,000
Products & Technology	Laboratorios Rubió	Convertible participation loan	2,000,000
KOA Biotech	Swanlaab / FUND-F / Faber	Capital increase	2,000,000
Mikrobiomik	Orza / Saburedo / Finnova / Urtxondo Investment / San Ignacio / Nacimac Investment / Fixius Capital / Siuled / Family offices	Capital increase	1,600,000
Virofend Therapeutics	Private investors	Capital increase	1,500,000
MIMARK Diagnostics	Clave Capital / Nara Capital / Namarel Ventures / WA4STEAM / CDTI Innvierte / Inveready / Canterbury Scientific / ICF	Participation loan	1,384,000
Macami Biotech	Private investors	Capital increase	1,300,000
Connecta Therapeutics	Inveready / Founders	Participation loan	1,160,000
Biohope	Vanquish Group / Private investors	Capital increase	1,126,000
Pharmamel	Business angels	Capital increase	1,102,640
Phoenix Biosolutions	Private investors	Capital increase	1,100,000
Rubió Nutraceuticals	Laboratorios Rubió	Convertible loan	1,050,000
Olavide Neuron	Axon Desarrollo Andalucía / Anecon Inversiones / Eoniq Fund / Biomedal / Private investors	Capital increase	1,000,000
Next-gen Leather	Beable Capital / CDTI Innvierte	Capital increase	948,000
Miramoon Pharma	Bstartup Sabadell / Family offices	Capital increase	850,000
Laminar Pharmaceuticals	Private investors	Capital increase	786,874
Biom	Beable Capital	Capital increase	750,000
ALA Diagnostics	BeAble Capital	Capital increase	672,000
Rubió Metabolomics	Laboratorios Rubió	Convertible participation loan	650,000
Pulmobiotics	Invivo Partners	Convertible loan	560,000
Polimerbio	CDTI Innovación / Orza Gestión / Kutxa Fundazioa	Capital increase	450,000
Oniria Therapeutics	Business Angel / Founding partners	Capital increase through debt-equity swap	425,000

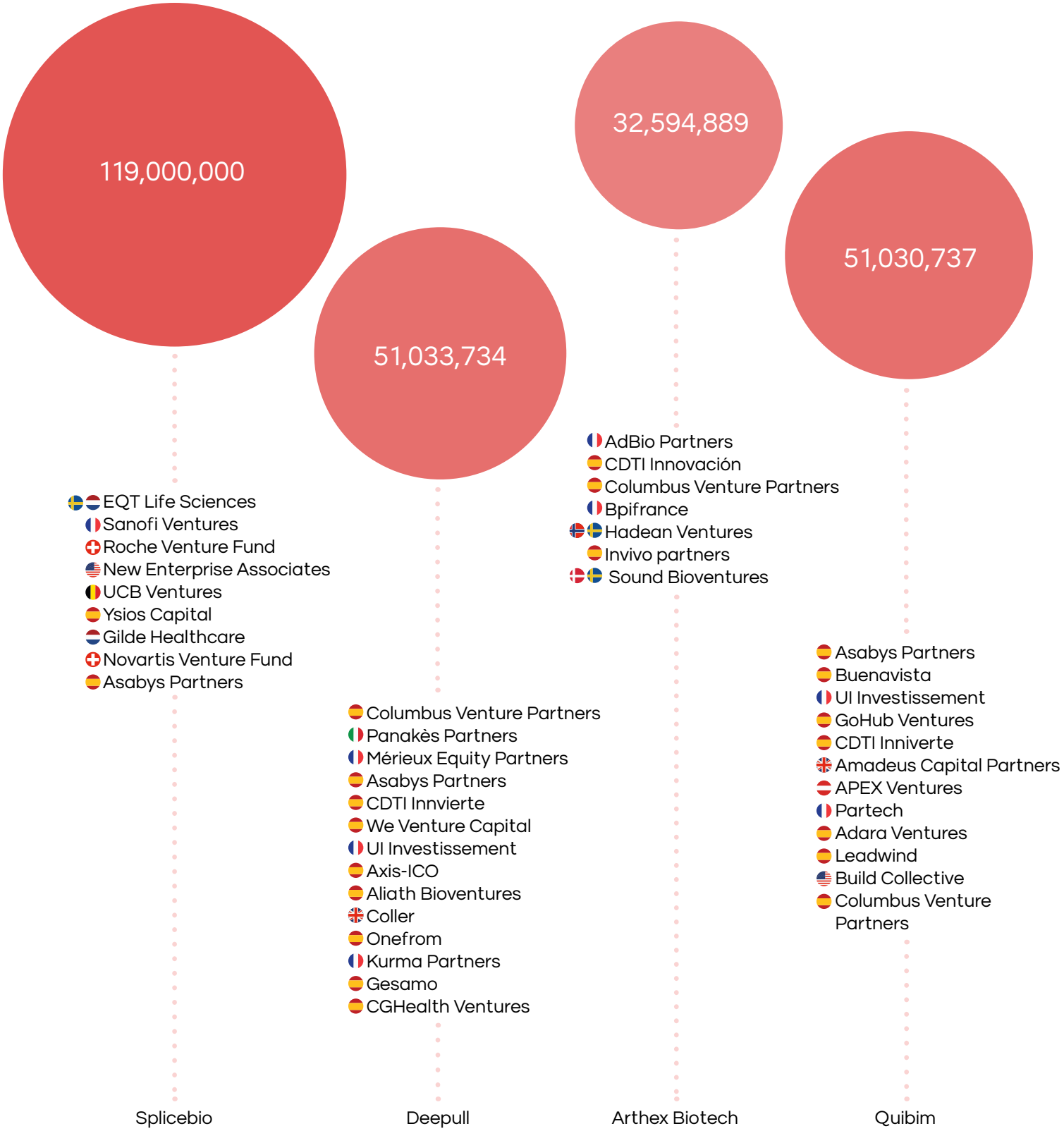
Organisation	Participating investors	Instrument	Total investment volume pledged (€)
OneChain Immunotherapeutics	AECC Scientific Foundation	Participation loan	300,000
Batea Oncology	Unirisco / Xesgalicia	Capital increase	300,000
Servatrix Biomed	Business angels	Capital increase	260,000
Arjuna Therapeutics	Nanogap	Capital increase	205,000
D-Sight	Clave Capital	Capital increase	200,000
24 Genetics	Business Angels	Capital increase	195,000
Molecular Sustainable Solutions	Beable Capital	Capital increase	186,000
Tirecat Health	Grow Venture Partners	Capital increase	170,000
STAb Therapeutics	AECC Scientific Foundation	Participation loan	150,000
Hybrid Imaging Systems	AECC Scientific Foundation	Participation loan	150,000
Aptadel Therapeutics	AECC Scientific Foundation	Participation loan	150,000
DIVERSA Technologies	AECC Scientific Foundation	Participation loan	150,000
Evolving Therapeutics	Angels	Capital increase	100,000
Innoprick	Clave Mayor	Capital increase	100,000
Nucaps Nanotechnology	Clave Mayor	Capital increase	85,000
Telum Therapeutics	Clave Mayor	Capital increase	75,000
Medical Plasmas	Clave Mayor	Capital increase	60,000

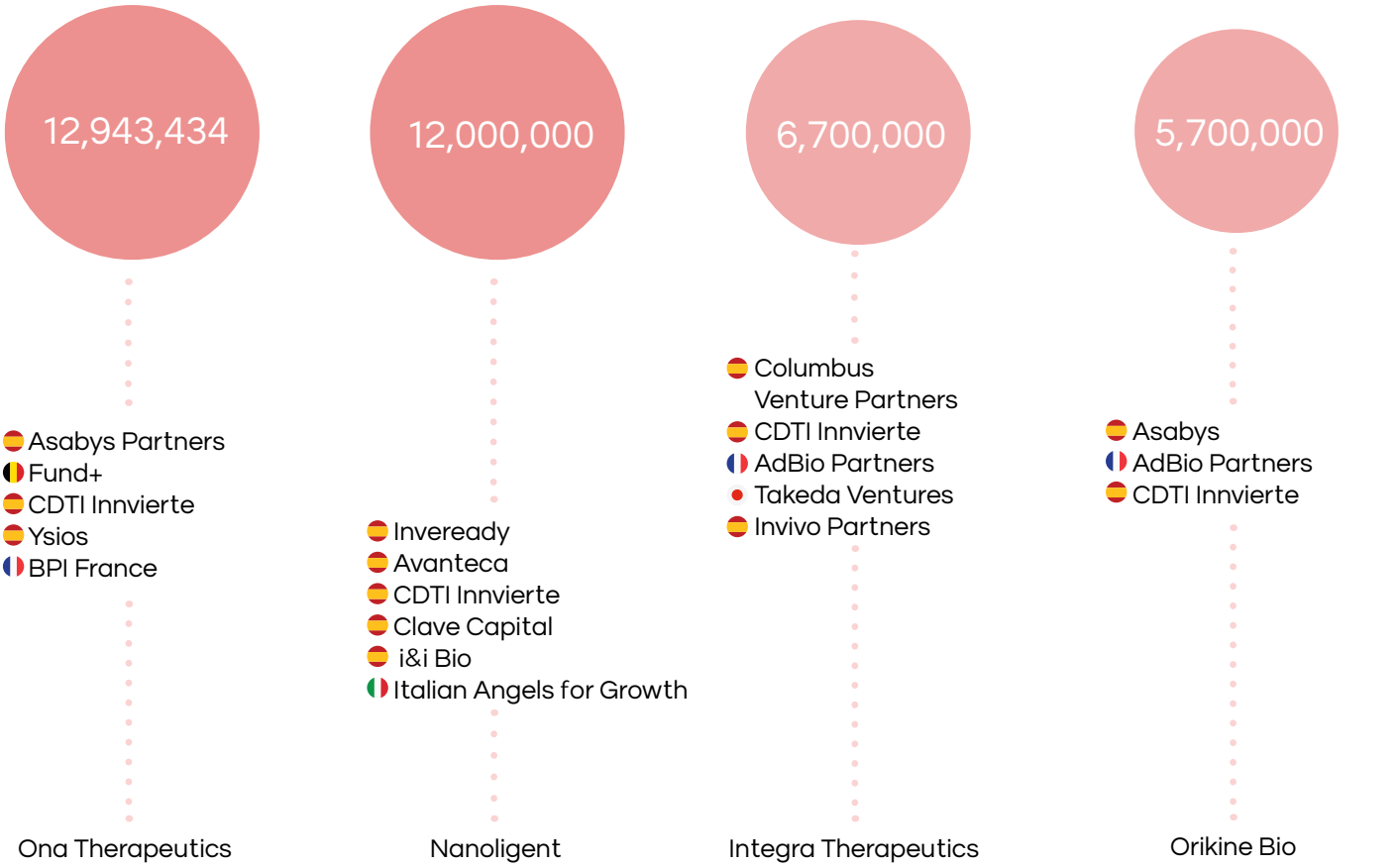
Table 2.1. Private capital increases carried out in 2025 by Spanish biotechnology companies. Source: AseBio.

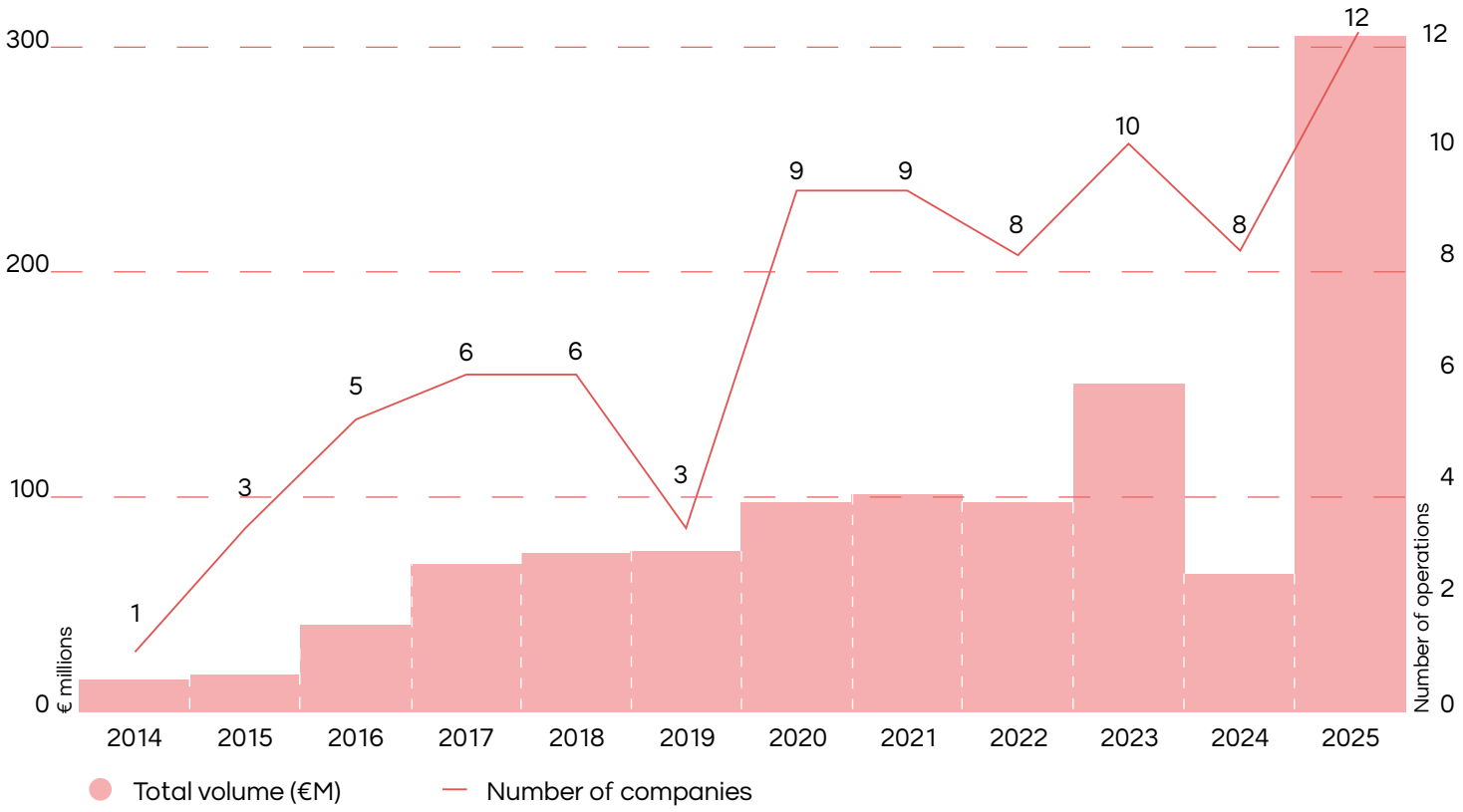
Operations with international investors exceeded €300 million.

The total secured in capital increase operations that included international investors was €302 million in 12 transactions. The international investors who took part in these transactions were from Germany, Austria, Belgium, Denmark, USA, France, Italy, Japan, Norway, Netherlands, Portugal, United Kingdom, Sweden and Switzerland.

Graph 2.2. Private capital increase operations with international investors, 2025. Source: AseBio.




12,943,434
Asabys Partners
Fund+
CDTI Innvierte
Ysios
BPI France
Ona Therapeutics
12,000,000
Inveready
Avanteca
CDTI Innvierte
Clave Capital
i&i Bio
Italian Angels for Growth
Nanoligent
6,700,000
Columbus Venture Partners
CDTI Innvierte
AdBio Partners
Takeda Ventures
Invivo Partners
Integra Therapeutics
5,700,000
Asabys
AdBio Partners
CDTI Innvierte
Orikine Bio
4,900,000
GIMIC Ventures
Tetraneuron
3,000,000
Faber Ventures
Elaia Partners
Übermorgen Ventures
ZYMVOL
2,000,000
Swanlaab
Fund-F
Faber Ventures
KOA Biotech
1,384,000
Clave Capital
Nara Capital
Namarel Ventures
WA4STEAM
CDTI Innvierte
Inveready
Canterbury Scientific
ICF
MIMARK Diagnostics



Graph 2.3. Evolution of volume of private capital increase operations with international investors (2014-2025).

Acquisition of companies to accelerate and develop technology.

Reig Jofre increased its stake in **Leanbio** from 47% to 85%. This company specialises in designing, developing, characterising and manufacturing biotechnology-based active ingredients.

Repsol, through its investment vehicle Repsol Corporate Venturing, acquired a 21.43% stake in **DARWIN Bioprospecting Excellence**, a start-up created at the University of Valencia that focuses on bioprospecting and cultivating microorganisms to create solutions for industry and environmental biosolutions. The operation aims to continue developing technology for biodegradation of polyethylene microplastics.

Laboratorios Rubió acquired 100% of Nanoboost, a company specialising in wholesale trade of food products and supplements, with the aim of accelerating the launch of new products in the dietary supplements sector.

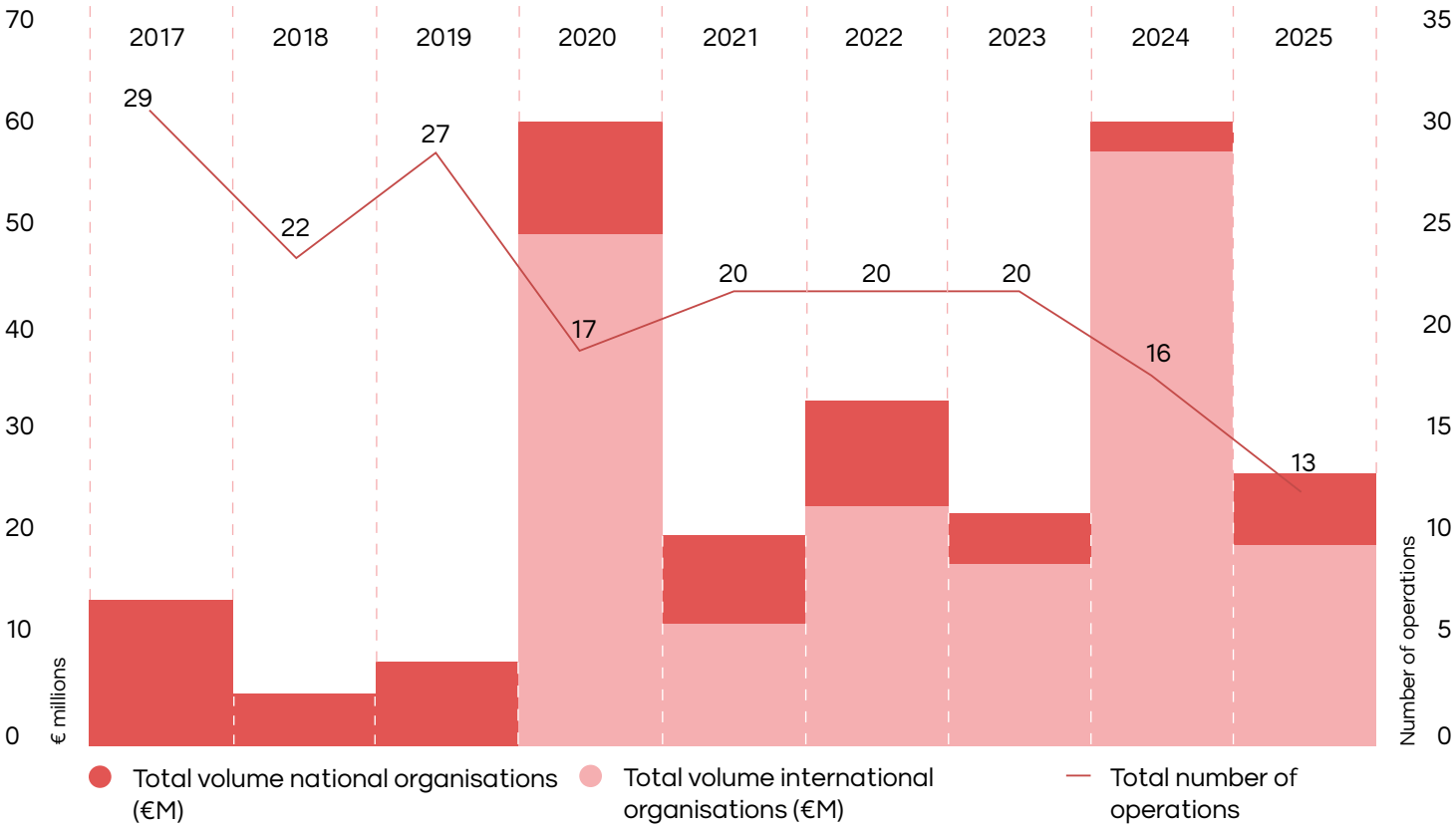
The EIB and ENISA provided the sector with more than €24 million in support.

This section looks at complementary funding obtained by biotech companies through participation loans or venture debt held by regional, national or international business development bodies.

Participation loans granted by ENISA, a public company under the Ministry of Industry and Tourism, and Avançsa loans have helped fund 11 biotechnology companies, totalling €5.2 million.

Furthermore, the European Investment Bank (EIB) granted **Amadix** a €15 million loan and **Vaxdyn** continues to secure funding through the Combating Anti-Resistant Bacteria (CARB-X) accelerator.

As graph 2.3 shows, the number of operations dropped from 16 to 13 and the amount raised by companies, from €58.4 million to €24.07 million.



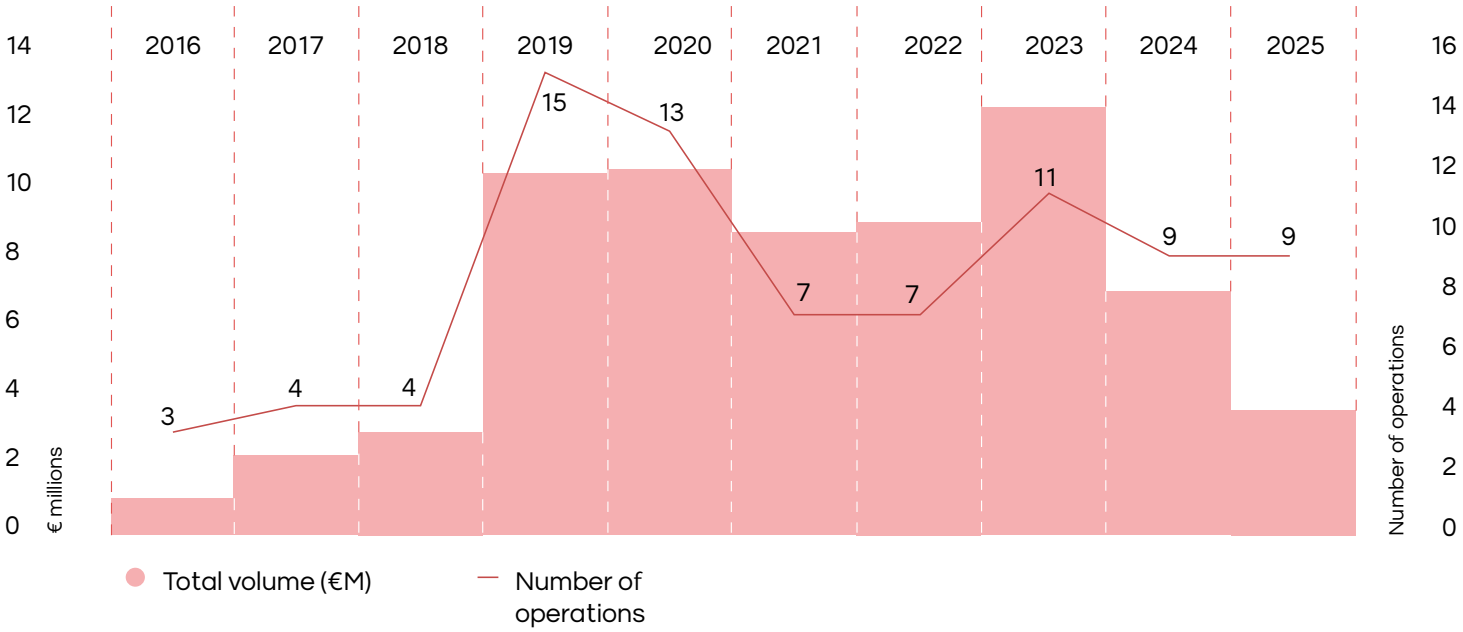
Graph 2.4. Evolution of loans granted by ENISA, regional societies and instruments of international bodies in 2025. Source: AseBio, ENISA, the EIB and Avançsa.

Capital Cell has consolidated its role as the main crowdfunding platform in biotechnology.

In 2025, nine biotechnology companies raised €3.6 million in crowdfunding through the Capital Cell platform. Comparing to data from the previous year, the number of transactions remained steady but the total volume secured dropped 42%.

Organisation	Crowdfunding platform	Total investment volume pledged (€)
Pharmamel	Capital Cell	992,455
Mikrobiomik	Capital Cell	603,394
Servatrix	Capital Cell	541,000
Batea Oncology	Capital Cell	458,000
Arjuna Therapeutics	Capital Cell	366,450
Ala Diagnostics	Capital Cell	241,838
SUCCIPRO	Capital Cell	195,000
24 Genetics	Capital Cell	155,303
Aniling	Capital Cell	70,000
D-Sight	Capital Cell	55,000

Table 2.5. Crowdfunding operations by Spanish biotechnology companies in 2025. Source: AseBio and Capital Cell.



Graph 2.5. Evolution of crowdfunding operations in biotechnology companies. 2016-2025. Source: AseBio and Capital Cell.

New funds for healthtech and digital health companies, and for dual-use applications.

This section includes the new funds launched and closed in 2025 by venture capital fund managers that focus on biotechnology companies.

It also highlights other funds that, although not specifically focused on the biotechnology sector, are geared towards business projects that are indirectly related, particularly funds for defence.

AltamarCAM Partners and **Asabys Partners** announced that Asabys would absorb **Aliath Bioventures**. Through this merger, they will jointly manage the Alta Life Sciences Spain I FCR fund and enhance capabilities, generate synergies and ensure continuity in creating value for investors.

The Spanish Society for Technological Transformation, under the Ministry for Digital and the Civil Service Transformation, invested €9.9 million in **CRB Digital Health III**, which specialises in digital health investments. This initiative aims to drive the digital transformation of the healthcare system by developing disruptive technologies applied to prevention, diagnosis and treatment of patients, as well as platforms to make the healthcare system more efficient and sustainable.

Nina Capital announced the first close of its €50 million Fund III, which focuses on innovation in the healthtech sector among European, North American, Israeli and Australian companies.

On a regional level, the Government of Catalonia approved the creation of the Lidera Transferència en Salut fund, which will be managed by the Catalan Institute of Finance with a budget of €60 million to fund advanced therapies projects in the early stages of development, with the aim of making them viable and facilitating the creation of new companies that are attractive to private investors.

Ship2B Ventures, a social impact venture capital firm in Spain, announced that it had raised €65 million for its BSocial Impact Fund II. This vehicle will invest in start-ups that improve the quality of life of vulnerable groups and seniors, or that contribute to the decarbonisation of key industrial sectors and the regeneration of ecosystems. In January 2026, Ship2B Ventures was also the first fund to formalise the first transaction under the CDTI Innvierte Deep-Tech & Tech Transfer programme, with a €30 million joint investment with the European Investment Fund in the Montana Children's Health fund, managed by Ship2B Ventures. This transaction is the first investment by the Innvierte Deep-Tech & Tech Transfer vehicle, which has a total of €353 million: €300 million from MICIU through the CDTI SICC Innvierte programme and €53 million from EIF.

The McWin Foodtech Fund ('McWin') and Mahou San Miguel signed an agreement to identify emerging trends and generate new opportunities in the field of food innovation, among others. They have an investment of €40 million for innovation and to develop new products, services and disruptive ideas.

In November 2025, Indra announced a new venture capital fund, Indraventures I, which it hopes will secure €200 million to invest in companies in various sectors, including the defence sector, specifically for companies developing dual-use technologies with high growth potential, whether in the expansion or early stages.

Nazca Capital joined the CDTI INNVIERTE programme as an investor through its Nazca Aeroespacial y Defensa INNVIERTE I FCR fund, with an investment commitment of €294 million. The fund will particularly focus on companies developing dual-use solutions.

In a significant development, **Inveready** announced that, more than 10 years after the launch of its Innvierte Biotech II fund in 2013, it had multiplied return on investment by a factor of 4.3.

Capital committed by venture capital operators rose 26% in 2025.

In 2025, the capital committed by venture capital firms investing in Spanish biotechnology companies rose 26%, while the capital paid out dropped 35%. Asabys Partners, Ysios Capital, Clave Capital, Invivo Capital Partners, Inveready and Columbus Venture Partners paid out €25.4 million and pledged €53.34 million (graph 2.6).

Graph 2.6. Evolution of volume paid out and committed. 2016-2025. Source: AseBio.

02.2 Public funding instruments.

In addition to private instruments, the biotechnology sector also turns to national public grant programmes run by the Centre for the Development of Industrial Technology (CDTI) and European programmes. This section looks at these grants and other European initiatives that, given their volume, are important to consider. Plus, as every year, it analyses the evolution of grants for R&D projects related to biotechnology awarded by CDTI since 2012.

MOA Foodtech, a company that specialises in transforming by-products from the food industry into sustainable proteins using AI and fermentation, was selected by the European EIC Accelerator programme, which awarded it €15 million. Of this total amount, €2.3 million is a grant and the rest is a participation loan.

Connecta Therapeutics was also one of the companies selected for the EIC Accelerator programme in 2025, receiving a €2.5 million grant.

Viva in Vitro Diagnostics received €2.5 million in non-dilutive funding through the EIC Transition programme, which aims to support SMEs through grants and provides access to the business acceleration programme Servicios de Aceleración de Empresas.

Furthermore, the EIC Fund participated as an investor in the capital increase carried out by Aortyx in 2025, which raised a total of €13.8 million.

R&D&I projects and Neotec grants supported by the CDTI in the biotechnology arena.

The CDTI supports business projects for industrial research and applied experimental development to create or significantly improve a production process, product or service, submitted by one or a group of companies. In the innovation arena, it supports projects close to market that help boost the company's competitiveness by incorporating emerging technology in the sector.

In addition to the above (support for R&D&I projects carried out by existing companies), CDTI also supports the creation or consolidation of start-ups or very young technology-based companies. It does this using various instruments, notably the Neotec grant scheme. This programme intends to fund new technology-based companies, which are those whose main activity is to exploit products or services that require the use of technology or knowledge developed through research activity.

In 2025, CDTI funded 32 operations (28 projects) in biotechnology, including individual R&D projects, LICa innovation projects, projects under the Missions programme, Partnership projects, Neotec grants and the Seal of Excellence scheme. The discrepancy between operations and projects is because there was a major cooperative project under the Missions programme in 2025, involving five operations or participations by five other biotechnology companies: the RAPID-VAC project.

Of the 32 operations in 2025, 11 were for 11 R&D&I projects funded through APR (R&D projects and LICa innovation projects), with a CDTI contribution of €5.2 million and a total budget of €6.1 million.

The remaining 21 operations for 2025 were 17 projects awarded grants (Neotec, Partnerships, Seal of Excellence and Missions) with a CDTI contribution of €12.3 million and a budget of €17.4 million. In the case of Missions, as has been pointed out, a joint project was carried out by five companies: the RAPID-VAC project.

RAPID-VAC proposes a self-sufficient national platform to develop and produce RNA vaccines for emerging pathogens or bioterrorist threats, reducing dependence on foreign sources. The initiative proposes to cover the full development cycle using Spanish intellectual property and industrial-scale production capacity. The consortium comprises Certest (lead partner), Virnóstica, Nostrum Biodiscovery, Curapath and Syngoi Technologies, with support from the National Centre of Microbiology (ISCIII), University of Zaragoza, University of Navarra and Barcelona Supercomputing Centre.

In the case of Neotec, in 2025 there were 10 biotechnology projects, which were used to fund the launch of new business projects that require the use of technologies or expertise developed from research activity and whose business strategy is based on technological development.

Type	Operations	Projects	Total budget (€)	CDTI contribution (€)	Repayable portion (€)	Non-repayable portion / Grant (€)
R&D&I projects	11	11	6,115,892	5,182,283	4,094,366	1,087,917
Neotec grants	10	10	3,930,131	3,118,166	0	3,118,166
Missions	5	1	5,153,155	3,380,347	0	3,380,347
Partnerships	4	4	1,656,111	1,085,931	0	1,085,931
Seal of Excellence	2	2	6,683,211	4,678,248	0	4,678,248
Total	32	28	23,538,500	17,444,974	4,094,366	13,350,608

Table 2.6. R&D projects approved in the biotechnology arena, 2025. Source: CDTI.

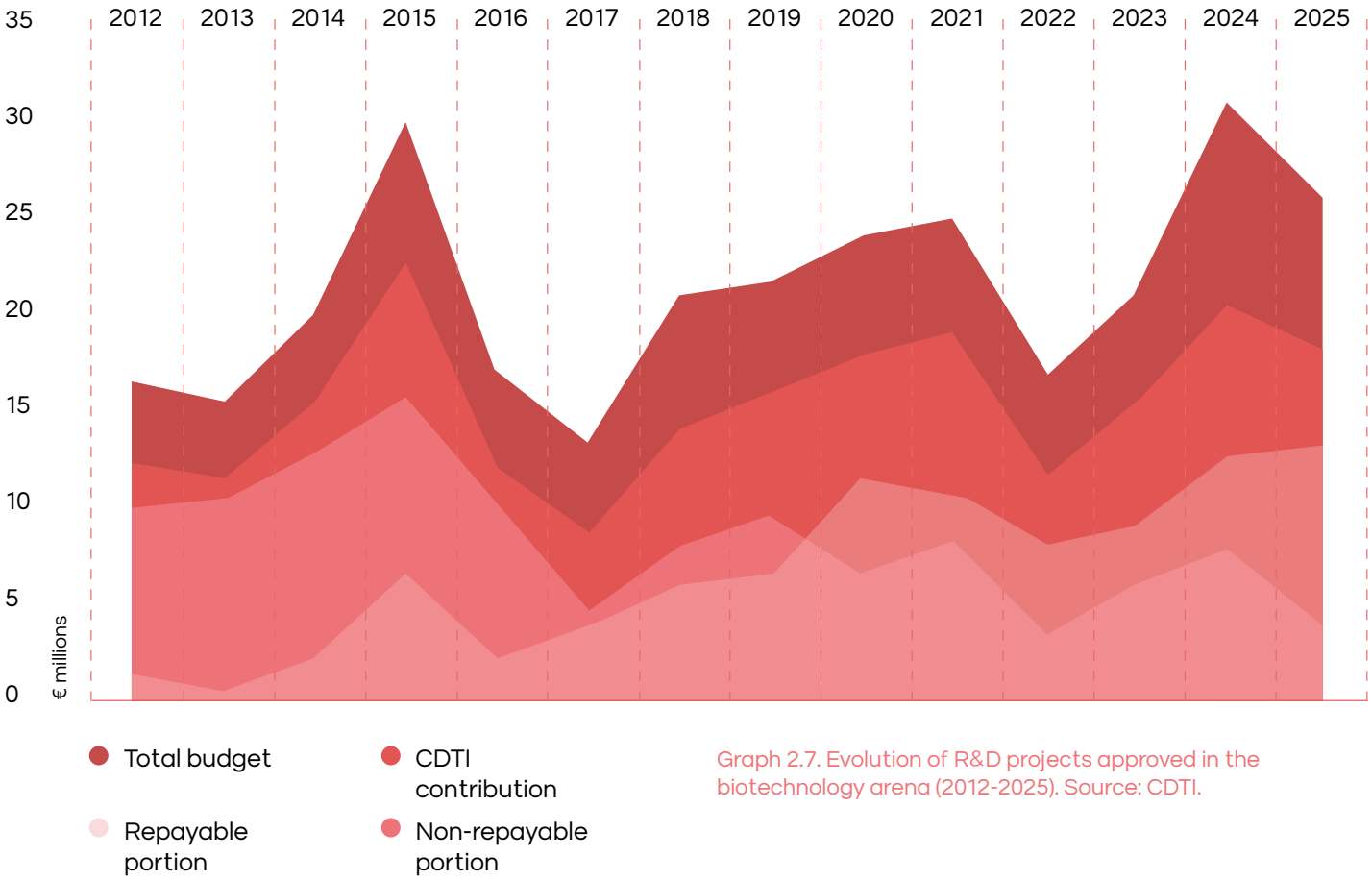
Evolution of projects funded by the CDTI in the biotechnology arena.

Analysis of the evolution of funding for CDTI projects between 2012 and 2025 looks at the biotechnology R&D projects approved for funding through grants and partially repayable aid each year.

The projects approved in 2025 stand out in number and CDTI contribution to the corresponding grant programmes: 21 of the 32 operations approved last year (17 of the 28 projects) were through programmes offering this type of support. This means the repayable portion (loan) is just €4.01 million, compared to €13.35 million for the non-repayable portion (grant).

In 2025, the CDTI contribution rose 9.4% and the total budget was 10.9% larger than the average for the previous three years (2022, 2023 and 2024), although the number of approved projects was 3% lower than the average for those three years, suggesting bigger biotechnology projects.

In addition to the above, it is worth noting that the nature of the CDTI contribution has changed: the grant (non-repayable portion) was 33.1% greater in 2025 than the average for the previous three years (2022–2024), while the loan (repayable portion) was 30.8% lower in 2025 than the average for the previous three years (2022–2024). This was due to the significant participation of companies in the sector in Neotec, Missions and the Seal of Excellence. The projects in the latter two categories were particularly large.



Graph 2.7. Evolution of R&D projects approved in the biotechnology arena (2012-2025). Source: CDTI.

Branded content

Carlos Buesa,
CEO, Oryzon Genomics

ORYZON

The Biotech Act: an opportunity Europe cannot afford to miss

Europe is at a turning point for its future in biotechnology. In a global environment where biomedical innovation is advancing very quickly, the ability to translate science into therapeutic solutions is a matter of economic competitiveness and strategic autonomy. In this context, the Biotech Act is a historic opportunity to correct a structural weakness in Europe: its difficulty in scaling up innovation and retaining the value it generates.

For years, Europe has proven its strength in scientific research, but that excellence has not always translated into industrial leadership. The reasons for this are well known: regulatory fragmentation, longer development times than in other parts of the world and a persistent gap in access to funding for advanced stages. As a result, many innovations that originate in Europe end up being developed or consolidated elsewhere.

In light of this, the Biotech Act is a step in the right direction. Speeding up the authorisation of clinical trials and promoting financial instruments to bridge the scale-up gap are measures widely called for by the sector. If implemented, they could significantly reduce development times and help get innovation to patients faster.

But the real challenge lies in the execution. Europe cannot afford incremental reform. The pace at which the United States and Asia are moving calls for brave decisions and the creation of a truly integrated market for biotechnology. Without this, the Biotech Act may fall short of its aims.

For companies such as Oryzon, which develop innovative therapies in areas of high unmet medical need, this context is particularly relevant. Our work in epigenetics, with programmes in oncology and the central nervous system, reflects the potential of European science to deliver world-class clinical advances. The results of iadademstat in acute myeloid leukaemia and the progress of vafidemstat in CNS indications show that research carried out in Europe can compete at the forefront of global innovation.

The Biotech Act must enable Europe to move beyond simply generating knowledge to become a place where that knowledge is transformed into sustainable economic value, leading companies and solutions that reach patients from Europe to the rest of the world. This involves improving regulatory frameworks, access to funding, incentivising private investment and greater collaboration between science and industry.

In addition to these factors, there is another critical element for European competitiveness: pricing and reimbursement frameworks. For therapies aimed at small patient populations, and particularly medicines with very high scientific, clinical and financial risks, applying traditional assessment models may limit the viability of transformative innovations. If Europe fails to evolve in order to recognise this value, it will be less likely for these innovations to be developed, manufactured or launched in Europe.

There are already examples of this risk. Gene therapies such as Zynteglo and Skysona were withdrawn or never reached the market in the European Union for commercial reasons linked to the feasibility of access. Glybera, the first gene therapy to be approved in Europe, also failed to establish itself commercially following authorisation. There have also been decisions not to launch products in specific European markets, such as Opdualag in Germany, due to the difficulty of securing a price deemed viable. These cases show that regulatory authorisation does not guarantee patient access if the price and reimbursement are not in place.

For European companies, this is a particularly sensitive issue. When a company that innovates in Europe takes on very high development risks in indications with few patients, the lack of predictability regarding adequate remuneration may force it to postpone, scale back or skip the European launch and prioritise other markets with a clearer path to return on investment.

Therefore, the Biotech Act must take into account not just regulatory streamlining and funding for scale-up, but also value-based pricing mechanisms, pay-for-results agreements, multi-year schemes and specific solutions for orphan or transformative therapies. This is the only way Europe can ensure that budgetary constraints do not block European patients from the latest innovations.

The biotechnology sector is a key driver of innovation, a source of highly skilled jobs and an essential component in tackling some of the major health challenges of our time. Recognising it as such requires policies that are commensurate with its potential impact.

The Biotech Act provides a solid foundation on which to build. Now is the time to ensure that it is implemented ambitiously, consistently and quickly. Because the question is not whether Europe has the talent or the scientific expertise to lead global biotechnology —it has amply demonstrated this— but whether it will be able to create the conditions necessary for that leadership to take shape within its own borders.

Branded content

Carlota Gómez de la Hoz,
Global Chief Corporate Affairs and Sustainability Officer,
HIPRA and Third Vice-president, AseBio

The Biotech Act: Europe's opportunity

Time flies, but it was only six years ago that our sector learnt a very clear lesson from the Covid-19 pandemic: relying on third countries for vaccines, medicines or biotechnology production capacity can pose a critical risk to European security.

Yes, Europe has scientific talent, leading research centres, a robust regulatory ecosystem and significant industrial capabilities. However, it risks falling behind if it does not put in place a framework that promotes investment, industrial scalability, strategic autonomy and a more streamlined regulatory process.

This is the logic behind the essential, strategic importance of the forthcoming European biotechnology law, the Biotech Act, which is currently being debated in Europe. The Biotech Act must serve as the legal basis for Europe to strengthen its health sovereignty and ensure its ability to respond to future public health crises in an increasingly uncertain global context.

If Europe's public health security depends on its ability to develop and produce vaccines and medicines in Europe, we also aspire to see a Biotech Act that will strengthen the European ecosystem that can make this happen. Economic competitiveness, yes; but also the ability to produce what we need when we need it most.

We are convinced that this path will not be paved solely by the major multinational pharmaceutical companies. Medium-sized biotechnology companies —in terms of capital— will also play a key role, provided they have consolidated industrial capacity, proprietary technology platforms and value chains that are fully integrated across Europe. Companies capable of rapidly scaling up their production and responding swiftly to public health emergencies.

The aim is to strengthen Europe's industrial roots, not only for economic reasons, but also to ensure the health resilience of the Union as a whole. Spain, as is evident in the report published by AseBio, can play a significant role in consolidating the bioindustry on the continent.

Against this backdrop, HIPRA is committed and well-placed to contribute to Europe's healthcare autonomy.

Based in Amer, Girona, we have been developing and manufacturing vaccines for both animal and human health for over 50 years. Our model integrates the entire value chain in Europe: research, development, production, and filling and finishing processes. This wholly European industrial capacity takes on strategic importance at a time when localisation of production has become a key factor in public health security.

With this aim in mind, HIPRA is part of the EU FAB project, one of the initiatives launched by the European Union to improve its response to future health emergencies. This project already reflects the European Union's commitment to having industrial capacity available within its borders so that it can respond swiftly.

But we need to move forward, particularly given the pace of investment in the United States and China. For this reason, one of the major challenges facing Europe will be to prevent investment in biological production and strategic technologies from continuing to shift towards other markets. For this reason, the Biotech Act should not be limited to incentivising scientific innovation, but must also help ensure that such innovation translates into production, employment and industrial capacity within Europe. European institutions must commit, through the Biotech Act, to Europe and to production in Europe.

The 'Made in Europe' debate thus takes on a particularly significant dimension in the biotechnology sector. It is a question not only of where the factories are located —although that is also a factor— but of ensuring that strategic decisions, investments and knowledge remain firmly rooted in Europe. Strengthening European companies committed to the continent's industrial development will be essential to building true strategic autonomy and a Europe that is better prepared to face the health challenges of the future.

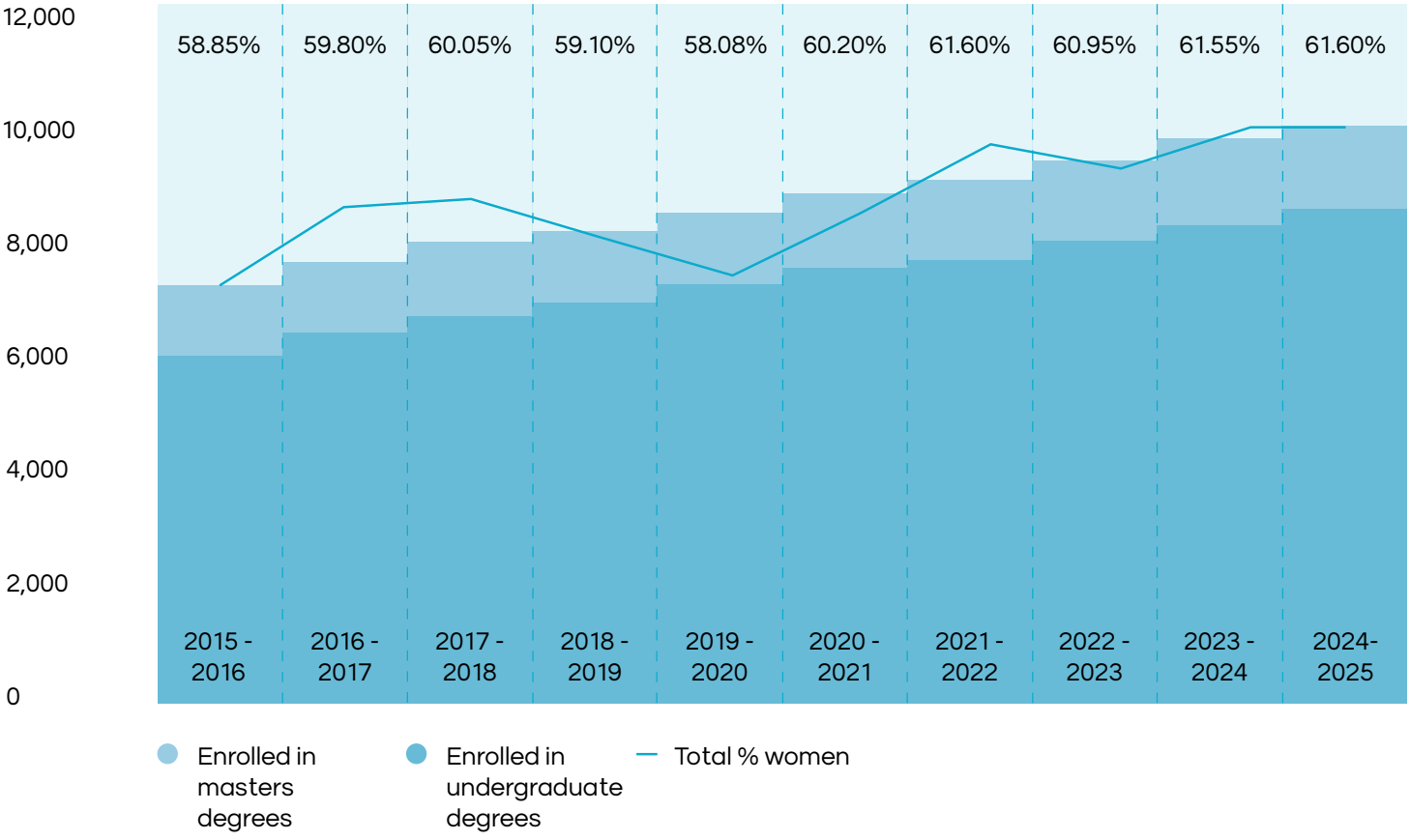
Talent and diversity

03. Talent and diversity

There were roughly 10,000 students enrolled in biotechnology studies the past academic year.

The number of students enrolled in an undergraduate or master degree in biotechnology continues to rise. Given the transversal nature of biotechnology, masters degrees in biotechnology are offered either in combination with other subjects or specialising in specific applications. So, we have identified undergraduate and masters degrees that focus exclusively on biotechnology or combine biotechnology with other disciplines such as molecular genetics, biomedicine, environmental, marine or food biotechnology, etc. As graph 3.1 shows, the number of students enrolled in university studies in biotechnology, both undergraduate and masters level, has increased more than 40% over the past ten years. In 2024-2025, the latest academic year for which data is available, there were 9,949 students in total, including undergraduate and masters studies, while there were only 7,096 in the 2015-2016 academic year.

Of these nearly 10,000 students, more than half were women, making up roughly 62%.



Graph 3.1. Evolution of number of students enrolled in university studies in biotechnology (undergraduate and master). 2015-2025. Source: Compiled internally from Statistics on University Students of the Ministry of Science, Innovation and Universities.

Biotechnology remained among the degrees that require the highest marks on university entrance exams in 2025.

At 13 of the 25 public universities, biotechnology degrees are among the 10 highest admissions scores required, showing students remain interested in studying biotechnology.

Plus, nine public universities offer eight dual degrees that combine biotechnology and related subjects such as pharmacy, biology, molecular biology, bioinformatics and data science, reflecting how the academic offering is adapting to growing demand for interdisciplinary profiles. All of them are among the ten programmes with the highest admissions scores required at the respective universities. Plus, one is ranked first.

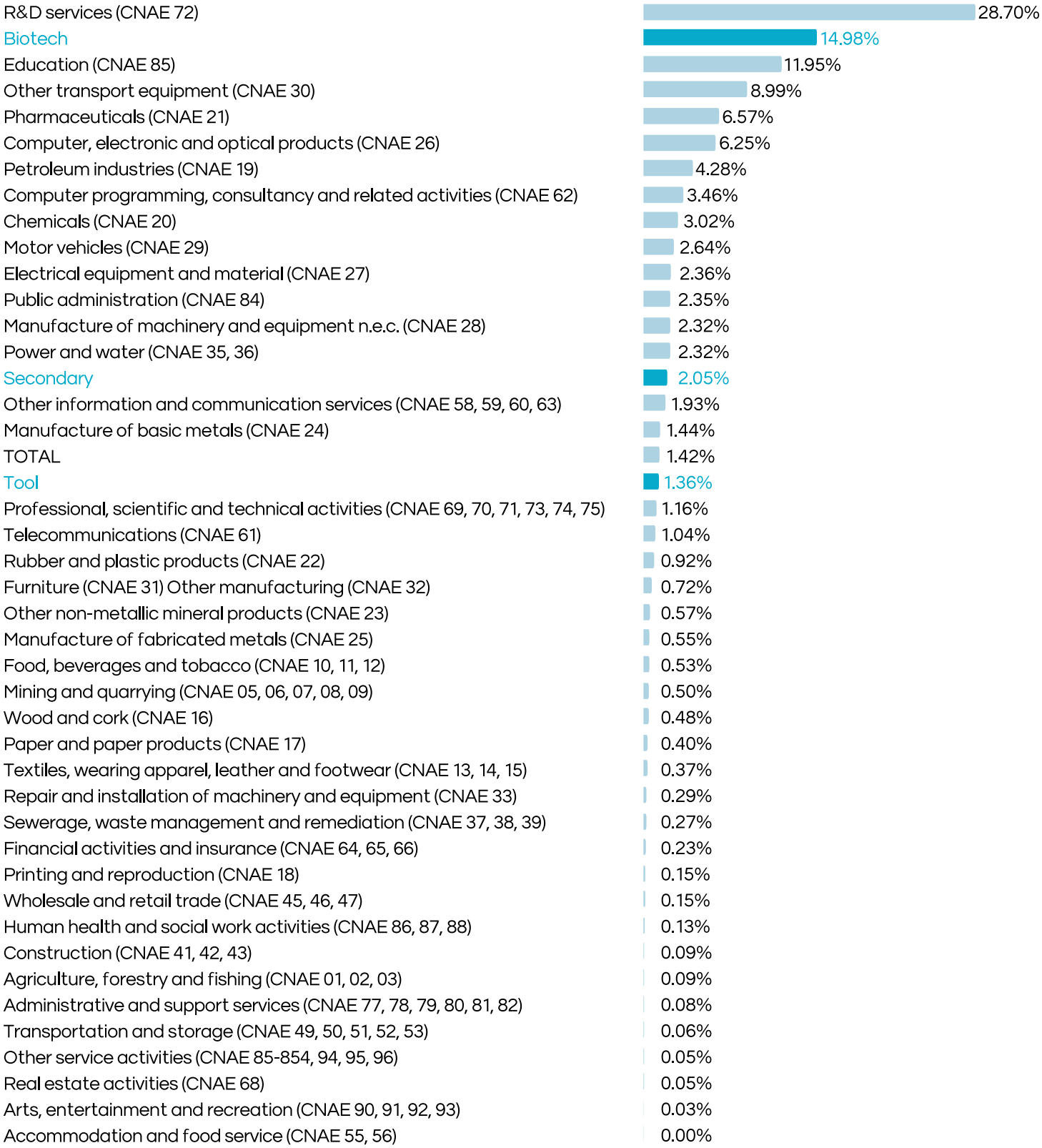
This is similar for directly related degree programmes, such as biomedical engineering, which is also among the ten most in demand degrees, with top-10 admissions scores at 17 of the 22 public universities that offer these degrees.

Additionally, 34 public universities offer degrees related to biotechnology, such as healthcare biology, genetics, molecular biology, nanoscience and nanotechnology, biochemistry, microbiology, biomedical sciences, healthcare engineering, biomedicine and advanced therapies, bioinformatics and food technology, among others.

Biotech firms still have the highest researcher intensity of any industrial sector.

Biotech firms remain in second place on the ranking of sectors with the highest percentage of researchers to total employees at 14.98%, surpassed only by R&D services companies.

At companies with biotechnology as a secondary activity, 1.36% of the workforce is researchers, while at companies that use it as a tool, it is 1.36% (graph 3.2).

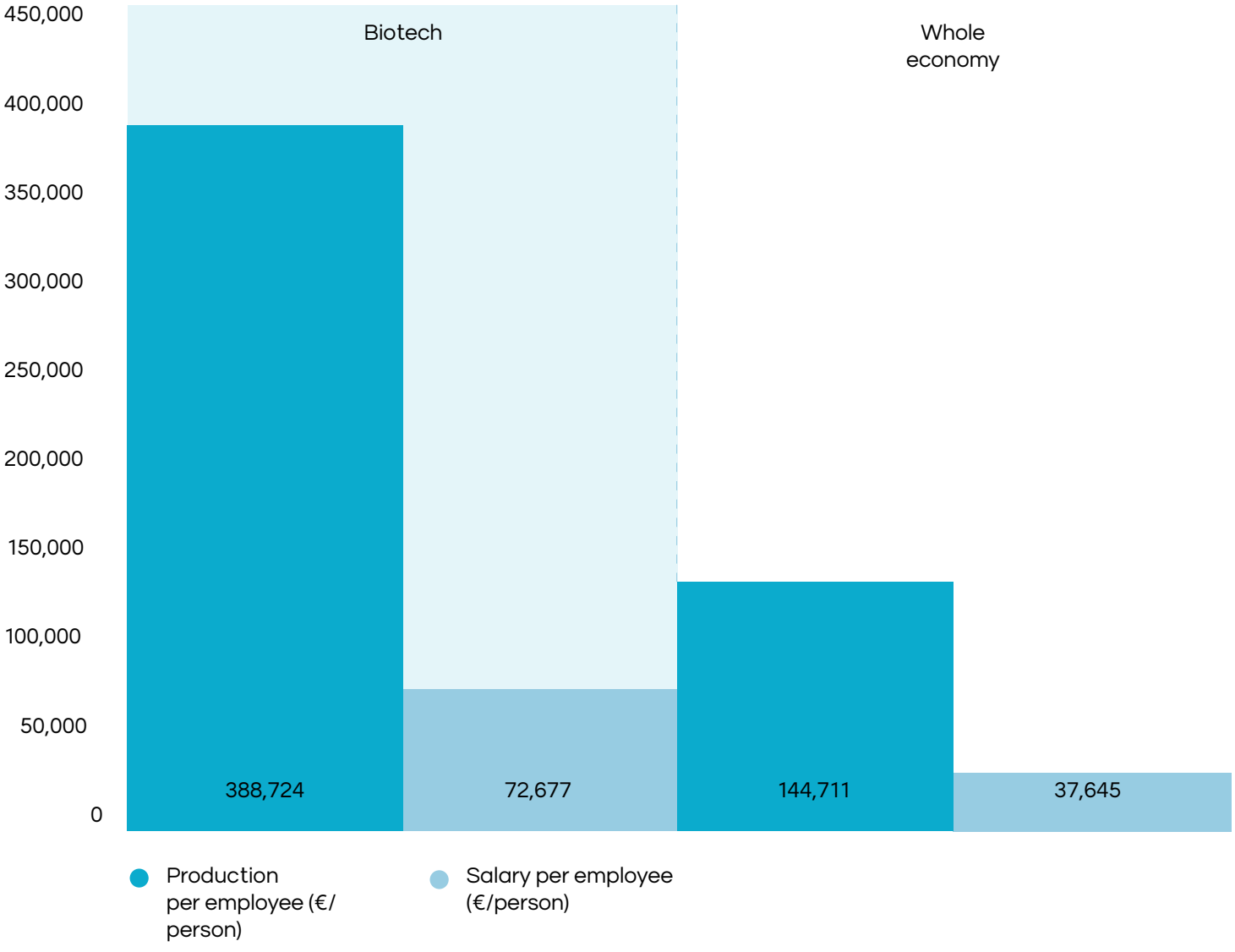


Graph 3.2. Ratio of researchers to total employment in 2024 (percentage of researchers to total employees). Source: Compiled internally from INE 2024 Survey on Biotechnology Use and Statistics on R&D activities.

The salary per employee at biotech firms is nearly double the national average.

As graph 3.3 shows, the higher qualification level of workers at biotech companies translates into higher average salary and is accompanied by significantly higher relative productivity.

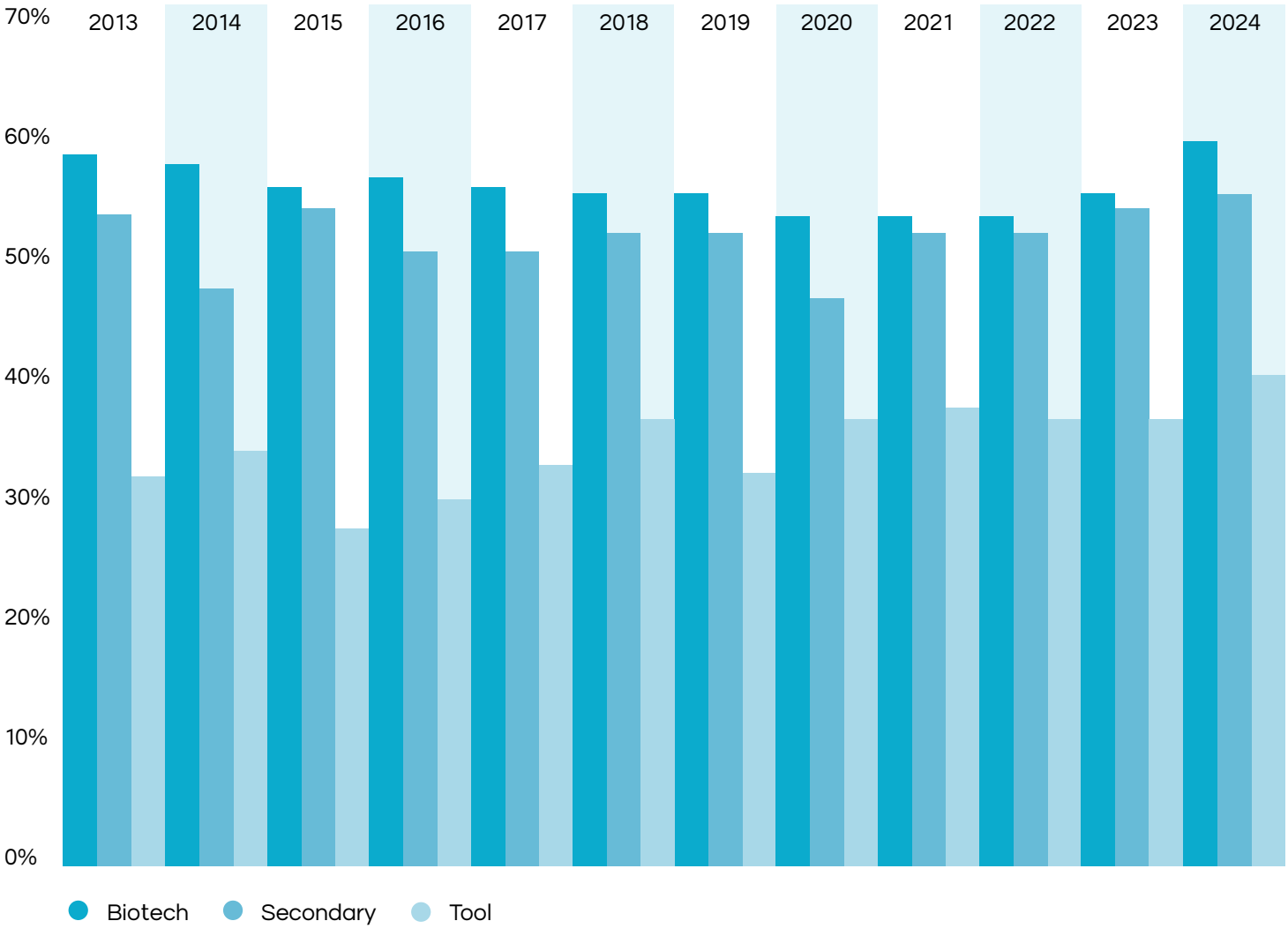
The average productivity of biotech companies was more than €388,000 per employee, 2.6 times the average productivity for the economy as a whole, with average salaries close to €72,000 per employee, nearly double the average for the whole economy. In 2024, both figures showed a relative increase from the previous year: with productivity per employee up 0.5% and salary per employee up 5.8%.



Graph 3.3. Basic productivity and salary ratios for employees at biotech firms. 2024.
Source: Compiled internally from the information on companies collected by AseBio.

Women make up 59% of total employment at biotech firms.

The percentage of women at biotech firms rose from 55% in 2023 to 59% in 2024. For companies with biotechnology as a secondary activity, this figure rose slightly, from 54% to 55%. However, at companies that use biotechnology as a production tool the percentage of women jumped from 36% to 40%.

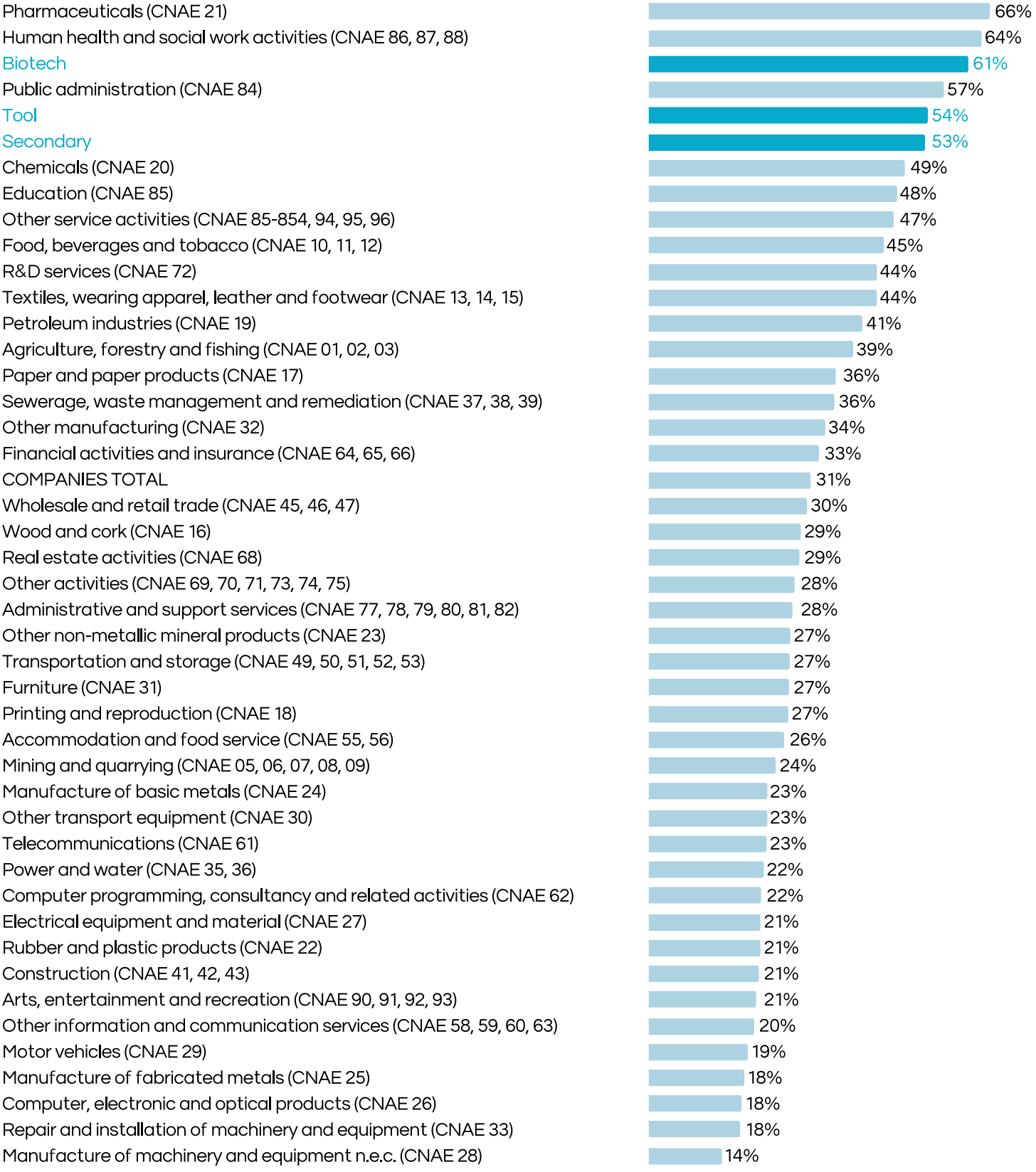


Graph 3.4. Evolution of women in biotechnology activities as a percentage of all biotechnology employees. Source: Compiled internally from INE Survey on Biotechnology Use.

Women make up 61% of all R&D staff at biotech companies.

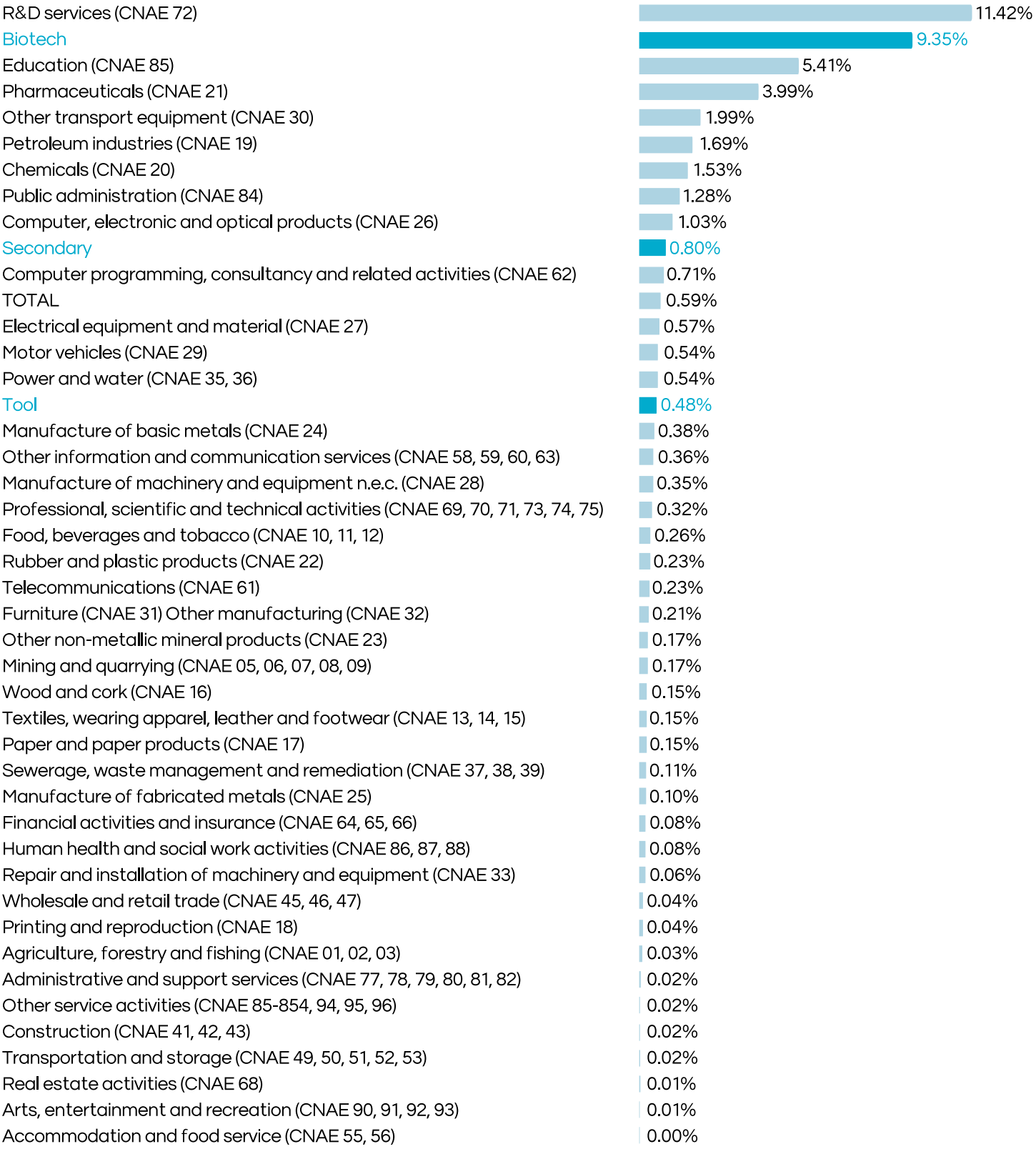
Focusing on women as a percentage of total R&D employees, the biotech sector remains in third, behind the pharmaceutical sector and healthcare and social services, up slightly from the previous year to 61%.

The percentages for companies with biotechnology as a secondary activity and companies that use biotechnology as a tool rose slightly compared to the previous year.



Graph 3.5. Percentage of women to total R&D personnel. Source: Compiled internally from INE 2024 Survey on Biotechnology Use and Statistics on R&D activities.

Looking at women researchers as a percentage of total employment (graph 3.6), female presence is once again particularly high at biotech firms, with more than 9 women researchers per 100 employees, surpassed only by R&D services companies. Furthermore, companies with biotechnology as a secondary activity and those that use biotechnology as a production tool have ratios much closer to the global average of 0.59%.



Graph 3.6. Ratio of female researchers to total employment in 2024 (percentage of women researchers to total employees). Source: Compiled internally from INE 2023 Survey on Biotechnology Use and Statistics on R&D activities.

Women make up 29% of executive teams at biotechnology firms.

Biotech firms show significant differences in the presence of women on their executive teams compared to the average for IBEX-25 companies. So, while only one IBEX company is currently headed up by a woman, one in four biotech firms have a female CEO. This difference persists, although to a lesser extent, in the positions of chairperson and within executive teams.

	% Women	
	Biotech	IBEX-25(*)
Chairperson	18.1%	13.6%
CEO	23.7%	3.0%
Executive teams	29.8%	21.2%

Table 3.1. Female presence in management teams at biotech companies in 2024. Source: Compiled internally from the Companies House registry and companies' websites. (*) Data from the INE and Institute of Women. Ministry of Equality.

Branded content

Clara Campos,
CEO, CESIF

The Biotech Act: vision, developments and impact for Spain

The Biotech Act is one of the European Union's most ambitious policy moves to regain competitiveness in the global biotechnology sector. European biotechnology already contributes €38.1 billion to the GDP and generates more than 913,000 direct and indirect jobs, 75% of which are in the healthcare sector. However, Europe has lost relative importance compared to the USA and China: its share of global commercial clinical trials dropped from 22% in 2013 to 12% in 2023, while venture capital investment in healthcare biotechnology was well below that of the US over the last decade.

In this context, the Biotech Act has been introduced as a strategic initiative to accelerate innovation, reduce regulatory barriers, strengthen biotechnology production in Europe and foster a more competitive ecosystem. For Spain, this is a particularly significant opportunity. The country is in a strong position in terms of clinical research, scientific output and hospital capacity, but still needs to make progress in funding, industrial scale-up, technology transfer and specialised training.

The first phase of the Biotech Act, which focuses on healthcare biotechnology, seeks to streamline the authorisation of clinical trials, remove barriers to the development of Advanced Therapy Medicinal Products (ATMPs) and introduce regulatory sandboxes for innovative projects. These measures could have a very positive impact in Spain, one of the most active European countries in clinical research and home to the Spanish Agency of Medicines and Medical Devices (AEMPS), which is recognised for its role in authorising clinical trials. A more streamlined regulatory process could help attract early-phase clinical trials, promote advanced therapies and encourage a larger part of the value chain to remain in Spain.

The second phase, expected to extend the scope of the European framework to include industrial, agrifood and environmental biotechnology, will also open up significant opportunities. Promoting biomanufacturing, integrating artificial intelligence into the sector's life cycle, strengthening biosafety and connections among regional clusters can benefit a country with consolidated ecosystems in Madrid, Barcelona, the Basque Country and Andalusia. Spain has the critical mass of scientific, business and healthcare expertise required to become part of a European network of excellence, provided it can transform its research capabilities into scalable, sustainable, competitive projects.

One of the greatest challenges will be talent. To grow, the biotechnology sector needs professionals capable of combining scientific knowledge and regulatory, industrial, digital, translational and management skills. The Biotech Act recognises this need by including measures for upskilling and reskilling in biomanufacturing, artificial intelligence, digital technologies and translational research, as well as partnerships joining universities, training centres, research institutes and industry.

At this stage, specialised training will be key. At Cesif, as a leading centre for training professionals for the pharmaceutical, biotechnology, healthcare and food sectors, we believe we can play a significant role in developing the skills required for this new phase. Our links with industry and our practical approach allow us to help bridge the gap between academic education and the real-world skills the sector needs: regulatory issues, quality, production, clinical research, innovation and business development. For Spain to take full advantage of the Biotech Act, it will be essential to train professionals capable of driving science from laboratory to market.

Business fabric

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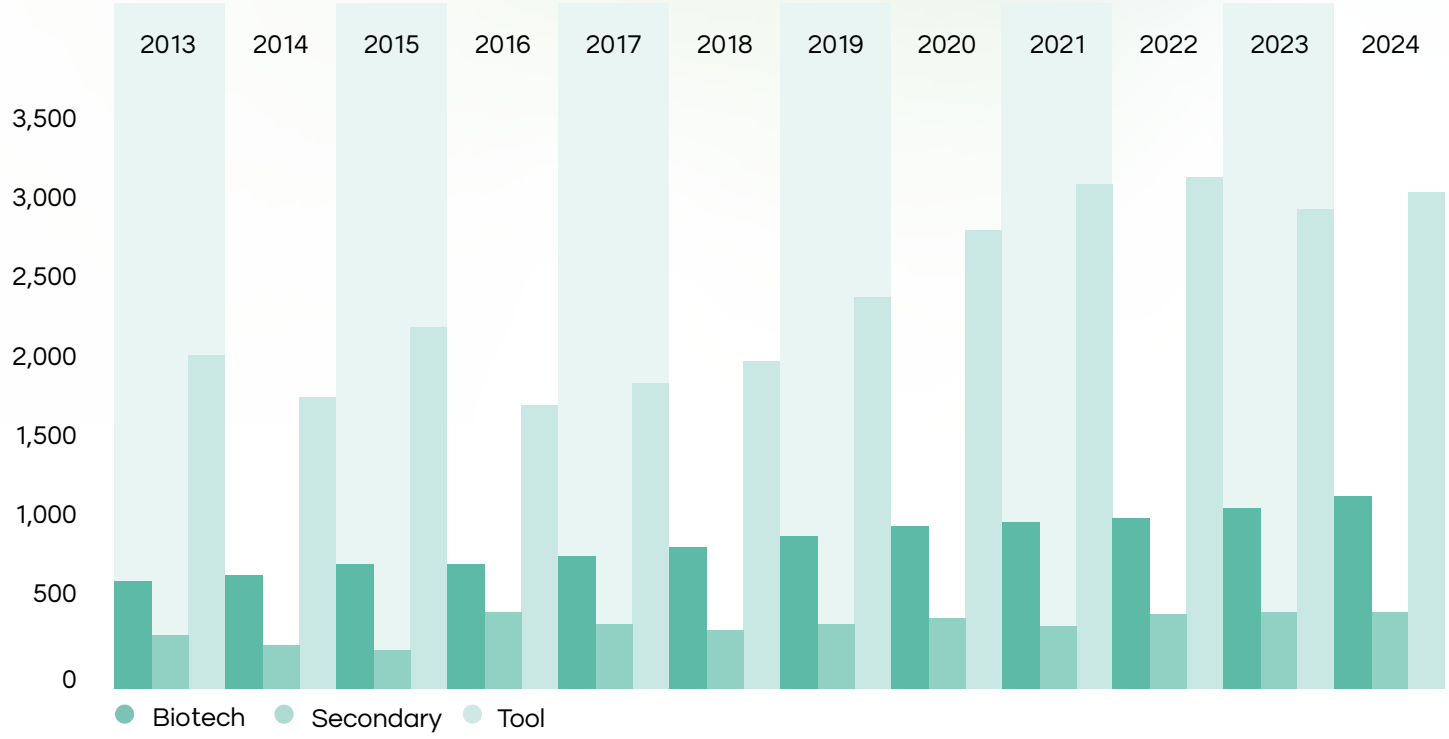
04. Business fabric

There are now more than 1,100 biotech companies in the sector.

The number of companies that carry out biotechnology activities rose 6% to 4,465 businesses. The overall ratio of biotechnology companies remains virtually unchanged; whereas in 2023, for every 1,000 companies, 2.83 were biotechnology firms; that figure now stands at 2.86.

Biotech firms were up 10.4%, from 1,014 companies to 1,119. The number of companies with biotechnology as a secondary activity grew 9.2% to 339 and the number of companies that use biotechnology as a production tool rose 4.1% to 3,006.



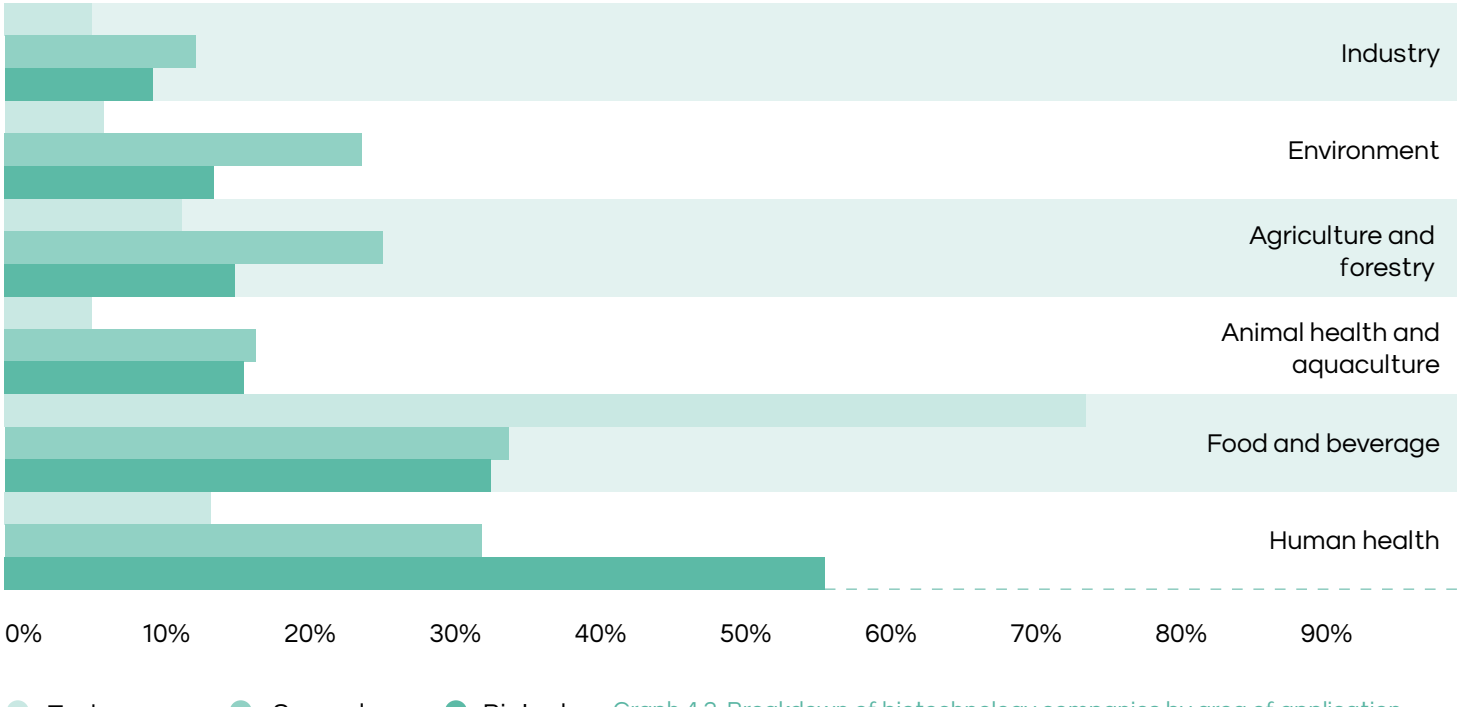
Graph 4.1. Evolution of the number of biotechnology companies. Source: Compiled internally from the INE Survey on Biotechnology Use and AseBio lists.

Human health and agrifood stand out as the main areas of activity for biotech firms.

Human health is still the main area of activity for biotech firms, with 55.5% of companies working in this area, although it dropped somewhat from the previous year, when this group made up 58% of the total. This is followed by companies working in food, with 32.6%. This group rose from 27% in 2023 to 32.6%, demonstrating that the field of food innovation is one of the most dynamic areas of application within the biotechnology sector. Animal health and aquaculture are the main focus for 16.1% of the companies, agriculture and forestry for 14%, the environment for 13.1% and industrial biotechnology for 9.8%.

Of the companies with biotechnology as a secondary activity, 31% work in human health, 33% in food applications and 26.4% in agriculture and forestry production.

In the case of companies that use biotechnology as a tool, the breakdown varies considerably. Of these companies, 74.5% work in food and 13.7% in human health.



Graph 4.2. Breakdown of biotechnology companies by area of application. Source: INE 2024 Survey on Biotechnology Use.

Micro-SMEs and SMEs make up 95.6% of all biotech firms.

Of the 1,119 biotech firms, 52% are micro-SMEs and their joint turnover makes up 1.9% of the total.

Small and medium-sized companies make up 43.6% of all companies and nearly 39.4% of joint turnover.

Large corporations, however, only make up 4.4% of companies while accounting for 58.7% of joint turnover.

	Number of companies	% of the total	Average turnover (€ millions)	% of total turnover
Micro-SME (fewer than 10 employees)	715	52.0%	0.4	1.9%
Small (10 to 49)	267	31.7%	5.6	9.6%
Medium (50 to 249)	100	11.9%	46	29.8%
Large (more than 250)	37	4.4%	247	58.7%
TOTAL	1,119	100%	13.9	100%

Table 4.1. Breakdown of biotech firms by size. Source: Compiled internally from the information on companies collected by AseBio. 2024.

Catalonia leads the ranking in companies and turnover, followed by the Community of Madrid.

Catalonia, Madrid and Andalusia have 54.33% of all biotech firms, and Catalonia and Madrid alone account for 76% of total turnover.

By number of biotech companies, Catalonia remains at the top of the ranking with 23.32% of the total, followed by Madrid with 18.68%, Andalusia with 12.33%, the Basque Country with 9.65% and the Valencian Community with 8.85%.

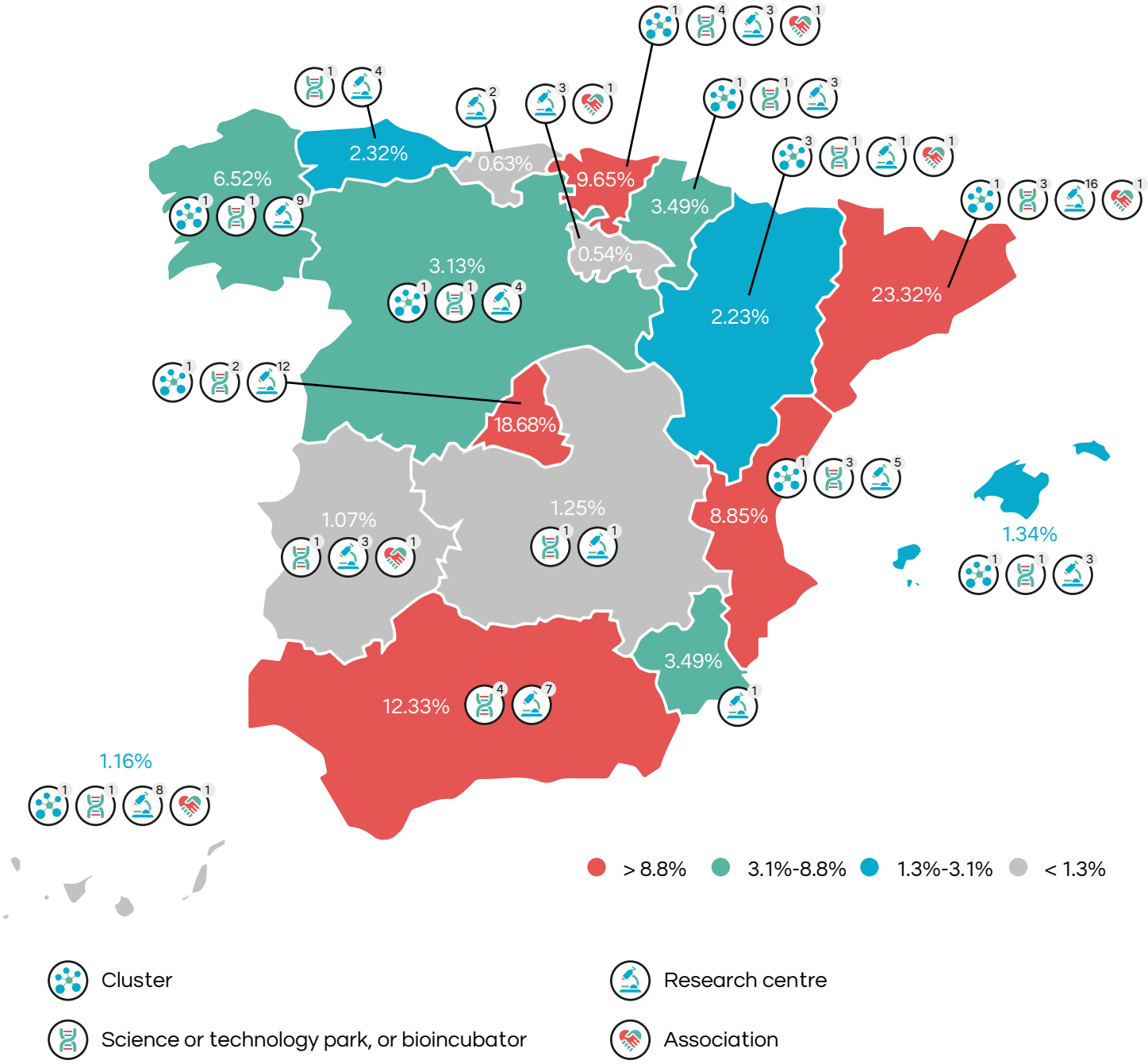
In turnover, Catalonia is ranked first with 43.05%, followed by the Community of Madrid with 32.84% and the Basque Country in a distant third at 5.65%.

By percentage of the sector's Gross Value Added (GVA) to the regional GDP, Catalonia also leads with 0.97%, followed by Madrid with 0.62% and Cantabria with 0.58

	Number of companies	% of the total	Average turnover (€ millions)	% of total turnover	GVA in % of regional total
Andalusia	138	12.33%	5.4	4.80%	0.16%
Aragon	25	2.23%	13.2	2.11%	0.30%
Asturias	26	2.32%	0.6	0.09%	0.03%
Balearic Islands	15	1.34%	1.3	0.12%	0.01%
Canary Islands	13	1.16%	0.3	0.02%	0.00%
Cantabria	7	0.63%	31.0	1.39%	0.58%
Castile and León	35	3.13%	9.3	2.09%	0.21%
Castile-La Mancha	14	1.25%	5.3	0.47%	0.05%
Catalonia	261	23.32%	25.7	43.05%	0.97%
Valencian Community	99	8.85%	4.0	2.56%	0.12%
Extremadura	12	1.07%	4.1	0.32%	0.12%
Galicia	73	6.52%	7.2	3.38%	0.25%
Madrid	209	18.68%	24.5	32.84%	0.62%
Murcia	39	3.49%	1.5	0.38%	0.07%
Navarra	39	3.49%	2.7	0.69%	0.22%
Basque Country	108	9.65%	8.2	5.65%	0.45%
La Rioja	6	0.54%	0.4	0.02%	0.01%
TOTAL	1,119	100%	13.9	100%	0.41%

Table 4.2. Territorial breakdown of biotech firms. Source: Compiled internally from the information on companies collected by AseBio. 2024.

Graph 4.3 shows the breakdown of biotech companies by autonomous community and the biotechnology-related facilities in each one, including technology parks, business associations, sector clusters and research centres. Catalonia, the Community of Madrid and Andalusia stand out as the autonomous communities with the most biotechnology-related facilities.



Graph 4.3. Territorial breakdown of biotech firms and biotechnology-related facilities. Source: Compiled internally from INE 2024 Survey on Biotechnology Use.

In 2025, 39 new biotech companies were set up.

AseBio, with collaboration from the autonomous communities, identifies the new biotech firms created each year. To do so, we constantly monitor the sector to identify new companies created that focus on biotechnology. In 2025, 39 new biotechnology companies were identified. Of these 39 companies, 11 were set up in Catalonia, 8 in the Basque Country, 5 in Navarra, 3 in both Galicia and the Community of Madrid, and 2 companies each in Andalusia, the Valencian Community, Murcia and Extremadura.

Table 4.3 shows the name of the companies, autonomous community where they are located and their activity.

Company name	Autonomous community	Activity
Advanced Therapy System	Andalusia	Developing advanced therapies and biotechnology solutions in regenerative medicine.
Ajax DNA	Valencian Community	In vivo DNA synthesis, optimisation software for microbial consortia and DNA design for bioproduction using digital twins and AI.
Albor Biotech	Galicia	A USC spin-off specialising in efficacy trials for drugs to treat obesity, NASH and other metabolic diseases.
Amatista Biotech	Basque Country	Developing next-generation CAR-T cell therapies to make cancer treatments safer and more effective.
Amets Biotechnology	Navarra	Developing innovative therapies, focused on rare paediatric diseases.
Arcos Recombine R&D	Andalusia	Providing services and industrial development in the biotechnology and biomedicine arena.
Ardea Biotech	Catalonia	Developing and implementing innovative technologies based on extracellular vesicles as new natural nanovectors (Minudik®) for biomedical and pharmaceutical applications.
Base4 Biosciences	Catalonia	A spin-off of Hospital Sant Pau Research Institute (BCN), combining precision research, AI and omics analyses.
Biogenómika	Basque Country	Personalised genetic testing. Conducting combined neurological studies that analyse different layers of biological information to understand how each person's brain works and why certain symptoms appear in conditions such as autism or ADHD.
Blue Reef Algae	Basque Country	Growing and commercialising seaweed and biolabs for distinctive products for cosmetics, nutraceuticals, food and new materials.
Celltoki Bioprocessing	Basque Country	Designing, developing and industrialising a new generation of bioprocesses equipment that combines reusable hardware with single-use components and an advanced digital environment for control, monitoring and traceability.
Creative Genetics	Murcia	Developing molecular tools: end-point PCR, quantitative real-time PCR, digital PCR, mass sequencing and metagenomics, to develop innovative services for the agrifood sector.
Danae Urogenomics	Madrid	Developing urine-based liquid biopsy tools with microRNAs and immunological biomarkers for diagnosis, monitoring and therapeutic stratification of bladder cancer.
Flavii Therapeutics	Catalonia	A UB spin-off developing epigenetic therapies for central nervous system (CNS) disorders that currently have no curative treatment options.
Gynetools Salud Ginecológica	Murcia	A spin-off of the University of Murcia developing minimally invasive techniques for taking liquid biopsies of the female reproductive system.
Insaight Center	Navarra	Protein design for industrial and scientific applications using AI and advanced supercomputing.
Irundit	Catalonia	Developing extracellular vesicles as nanovectors to improve treatment with psychoactive drugs.
La Verabat	Extremadura	Developing biotechnological solutions based on the microbiome for precision nutrition. The YorGut project features functional food made from fermented goat milk with probiotics to improve digestive health.
Laproa Biotech	Cantabria	RAS systems for live shellfish aquaculture with patented biological filtration.

Makby Eva	Basque Country	3D bioprinting software to optimise and customise processes to create biological tissues and structures by managing multi-material models.
Matrix Biotek	Catalonia	Monitoring biologic medicines and diagnostics.
Microneox	Navarra	Developing and producing biofertilisers using microorganisms.
MW Dynamics Biot Lab	Basque Country	Developing a mini-bioreactor that can be implanted in a tumour, equipped with advanced nanosensors that process real-time information on the tumour microenvironment using artificial intelligence for an adaptive therapeutic response.
Nanogrow Biotech	Navarra	Developing innovative new-generation biological therapies and antibodies (nanoantibodies).
Nexyra Advanced Research	Madrid	Developing multi-omic intelligence solutions that integrate molecular and clinical data using systems biology and artificial intelligence to identify biomarkers and therapeutic targets, and develop predictive models and prognostics.
Nova Nano Medical	Catalonia	Developing antimicrobial and biocompatible coatings that reduce the risk of post-operative infection and improve osseointegration.
OrganAid Holdings	Catalonia	Providing efficient personalised drug predictions with a unique multi-step artificial intelligence analysis (organoid selection-toxicity-efficacy) in patient-derived organoids.
Oriva Therapeutics	Catalonia	Developing first-in-class and best-in-class treatments for chronic, prevalent diseases affecting women.
Orixe Salgada	Galicia	Developing natural biostimulants from algae that washes up on the beach using a process to extract water-soluble polysaccharides and insoluble fibres, while maintaining their natural functions.
Poliedra (Bioinnovative Solutions)	Basque Country	Developments based on microalgae to create sustainable products for various sectors and to care for the environment.
Popcorn Therapeutics	Navarra	Advanced therapies R&D using oncolytic viruses to treat incurable paediatric brain tumours, specifically diffuse midline gliomas (DMG).
Preservacoat	Basque Country	Innovative microbiological solutions for food preservation and safety.
ProA2 Health	Galicia	Developing functional foods using Galician A2 milk, which is known for being more easily digestible.
Prospect Biotech	Basque Country	Solution with Raman spectroscopy and its nanoparticle-enhanced variant to amplify the signal and increase the sensitivity of biomarker detection to optimise the production and monitoring stages of cell therapies such as CAR-T.
ReproNovo Therapeutics	Catalonia	Developing innovative therapeutic solutions for male and female infertility, as well as options for pioneering treatments of uterine conditions such as adenomyosis.
Spes Immunotherapeutics	Catalonia	Treating cancer using cutting-edge precision immunotherapies.
TeraDx	Valencian Community	Developing a qPCR technique that detects salivary biomarkers associated with squamous cell carcinoma of the larynx, without the need for biopsies or invasive tests.
Tolemy Bio	Catalonia	R&D, producing, customising, commercialising, distributing and implementing comprehensive cell culture media solutions.
VIOLET Pharmaceuticals	Catalonia	A spin-off from the Hospital del Mar Research Institute in Barcelona, developing an mRNA therapy for metastatic cancers.

Table 4.3. Companies devoted to biotechnology that began working in 2025. Source: AseBio with collaboration from Andalucía TRADE - Agencia Empresarial para la Transformación y el Desarrollo Económico, Área de Innovación y Transferencia de Tecnología, Axencia Galega de Innovación, Bioasturias, Biobal, Biocat, Bioga, BIOVAL, Chamber of Commerce of Cantabria, Centro Europeo de Empresas e Innovación de Murcia, Centro Europeo de Empresas e Innovación de Navarra (CEIN), CEEI Asturias, General Directorate for Industry, Energy and Innovation of the Government of Navarra, Director General del Instituto para la Competitividad Empresarial, Knowledge Foundation Madri+d, Fundecyt - Science and Technology Park of Extremadura, Institute for the Promotion the Region of Murcia, Instituto para la Competitividad Empresarial de la Junta de Castilla y León, Oficina de Transparencia y Buen Gobierno de la Junta de Castilla La Mancha, Madrid Science Park, Albacete Science and Technology Park, SODENA, Sodercan, SPRI and University of Castile-La Mancha.

Branded content

Moisés Jiménez Suárez,
General Manager, Promega Biotech Ibérica

The Biotech Act and the challenge of industrialising Spanish science

Rarely have so many factors for change come together for European biotechnology. The Biotech Act —focusing on healthcare biotechnology in the first phase, with a second, industrial phase planned for 2026— is the EU's biggest legislative effort to bridge the gap between our scientific excellence and our actual ability to turn it into products and therapies that reach the market. The paradox is well known: Europe generates a very significant proportion of the most highly cited scientific publications in biomedicine, but its share of global investment in biotechnology remains significantly lower than that of the United States or China. We research like leaders, but struggle to industrialise. The Biotech Act aspires to bridge this gap through regulatory simplification, strengthening biomanufacturing and a pilot programme that hopes to mobilise up to €10 billion.

A historic opportunity for Spain

Spain reaches this turning point with some very significant assets: world-class research centres, leadership in clinical trials, exceptional scientific talent and more than 300 biotechnology companies that are AseBio members. However, it would be a mistake to assume that the Biotech Act alone will resolve the structural challenges facing the sector: lengthy, fragmented approval processes, inconsistent regulatory interpretations across the autonomous communities and the 'valley of death', which particularly affects 70% of SMEs and start-ups in the ecosystem. Pressure from the IVDR adds another source of uncertainty for diagnostics suppliers and research centres. The Biotech Act has a real opportunity to establish clearer and more harmonised criteria in this arena, which is just as urgent as funding. Likewise, integrating artificial intelligence into scientific workflows —explicitly recognised by the initiative and aligned with the European Commission's AI Continent Action Plan— reinforces a something that companies such as Promega have been working towards for some time.

Role of companies that enable science

There is a great deal of talk about the major players in the sector: the biotech companies developing innovative therapies, the research centres, the biomanufacturing platforms. Less is said about those of us who make all that work possible: suppliers of reagents, instrumentation, analytical solutions and technical support, which are the foundation upon which day-to-day research is built. The acceleration of multinational clinical trials proposed by the Biotech Act —with deadlines cut from 106 to 75 days— requires precisely this standardisation: in sample preparation, in biomarker detection and in the traceability of analytical data. When a hospital analyses microsatellite instability to determine whether a patient is a candidate for immunotherapy or when a laboratory scales up a cell therapy process, there is an infrastructure of scientific tools behind the scenes that rarely makes the news, but without which none of this would be possible.

At Promega, we have been working on this often-invisible level for 48 years. Being a privately owned company since 1978 has allowed us to hold on to a long-term vision that is unusual in the sector, investing 13% of our revenue in R&D and building lasting relationships with the international scientific community.

Commitment to the biotechnology ecosystem

What sets a company like ours apart cannot be measured solely based on our product range, but based on our ability to be a true partner to the sector. The Spanish biotechnology ecosystem is diverse and complex, but all its stakeholders share a common need: reliable, accessible scientific tools backed by specialist technical support. Our commitment is to be where scientific decisions are made, to understand the real bottlenecks each type of stakeholder faces and to provide solutions that reduce friction between the laboratory and the clinical or industrial outcome. The Biotech Act reinforces that goal: a more streamlined, better-funded sector with greater capacity to scale up also needs suppliers that can match that ambition.

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Marc Martinell,
co-founder and CEO, Minoryx Therapeutics

Innovation in biotechnology is transforming the therapeutic approach to rare diseases in Europe

Minoryx Therapeutics' history highlights the Spanish biotechnology sector's ability to generate high-value innovation, attract specialised investment and advance development of made in Spain therapies that can make a real difference in the lives of patients with rare or orphan diseases.

Founded in Mataró (Barcelona) in 2011, Minoryx focuses on developing therapies for **rare diseases of the central nervous system** (CNS) where there is a high unmet medical need. Minoryx is currently one of the few Spanish biotech companies with a drug in the **registration phase**.

Minoryx is developing **leriglitazone** (NEZGLYAL®), a first-in-class drug targeting rare diseases such as X-linked adrenoleukodystrophy (X-ALD) and its most severe form, the cerebral form or cALD, as well as Rett syndrome and Friedreich's ataxia, among others.

The social impact of these conditions is devastating, both for the patient and their family. X-ALD is a rare, highly debilitating and potentially fatal neurodegenerative disease with a global incidence of around 6 cases per 100,000 live births. cALD is characterised by the presence of lesions in the brain that can develop rapidly and progressively. As these lesions grow, they cause symptoms such as loss of voluntary movement, inability to swallow and communicate, blindness, total incontinence and, ultimately, death, with an average survival time of 3 to 4 years. Boys and adult men with X-ALD may develop cALD at any stage of their lives. According to current data, cALD occurs in 31% to 35% of children and up to 60% of adults with X-ALD, meaning that it affects around two-thirds of males with X-ALD worldwide.

Minoryx's drug leriglitazone is a new, orally administered selective PPAR-gamma receptor agonist that has demonstrated the ability to cross the blood-brain barrier and a favourable safety profile.

In clinical trials involving patients with X-ALD, leriglitazone has demonstrated efficacy and significant clinical benefits in both children in the NEXUS study (Phase 2/3) and in adults in the ADVANCE study (Phase 2/3). The NEXUS results show that children with cALD remain clinically and radiologically stable for up to two years after treatment. In the case of ADVANCE, the data shows that, in adults, leriglitazone stabilises lesions and reduces the incidence of progressive cALD, delaying or preventing the life-threatening progression of the disease. Furthermore, under an agreement with the US Food and Drug Administration (FDA), Minoryx is conducting a global Phase 3 trial in adult patients with progressive cALD. The company is also conducting a Phase 2a trial into Rett syndrome at Hospital Sant Joan de Déu in Barcelona.

Both the European Medicines Agency (EMA) and the FDA have granted leriglitazone orphan drug designation.

Minoryx is working towards obtaining regulatory approval for leriglitazone to treat cALD in Europe in 2026, which could mark a milestone in the treatment of rare neurodegenerative diseases and also for the Spanish biotechnology ecosystem.

With this goal, the company has entered into a **strategic partnership** to commercialise leriglitazone in Europe with the pharmaceutical company Neuraxpharm, which is already preparing for the commercial launch of the drug. Minoryx has also reached an agreement with Sperogenix regarding the rights in China.

Minoryx's rapid evolution from an early-stage company to where it is today would not have been possible without four fundamental pillars: the **team**'s firm commitment and excellent know-how (most have been with us since the very beginning); strong support from **national and European authorities** since the early stages when uncertainty was at its highest right up to the present day; ongoing support from **private investors**, who have adapted to each of the company's different stages, with our shareholder base featuring a significant presence of leading Spanish investors specialising in healthcare and a substantial number of European investors; and, finally, close collaboration with a wide network of **hospitals, research centres** and key opinion leaders, as well as **patient organisations** worldwide. To all of them, we are extremely grateful for their support over the years.

Environment

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05. Environment

05.1. Regulatory framework: the Biotech Act.

The AseBio 2024 Report highlighted national and European legislative developments. At that time, there were already indications that the European Commission was set to enact the new European law on biotechnology, the Biotech Act, and to launch a participatory process through public consultations.

This year, we are analysing how the European Commission's consultation process has unfolded and, following the publication of the draft Biotech Act in December 2025, the key elements that will have the greatest impact on the sector once it is enacted.

The EC recognises that the biotech sector needs to become more competitive and that it faces market and regulatory barriers.

On **14 May 2025, the European Commission** launched a **Call for evidence** for the future Biotech Act, with the general aim of **making the EU biotechnology sector bigger and more competitive**, while maintaining high safety standards.

In this consultation, the European Commission stated that, although the EU has a strong global position in basic research, this was not translating into improved industrial products or processes that could be brought to market, and acknowledged that biotechnology's potential to contribute to the Union's economy, sustainability and security was not being fully realised.

With reference to the document **Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU**, and the **reports by Mario Draghi and Enrico Letta**, the European Commission stated in this consultation that European companies were not **competitive enough** and faced various **market and regulatory barriers**.

The EC has announced that the Biotech Act will be divided into two phases.

On 21 October 2025, following the Call for evidence, the EC announced in its Work Programme for 2026 that the Biotech Act would consist of two phases.

The **first, scheduled for late 2025** and led by Commissioner for Health and Animal Welfare **Olivér Várhelyi**, would bring together a range of provisions on **health, clinical trials, in vitro diagnostics and medical devices**, as well as **food and feed**.

The **second phase**, which would develop **Biotech Act II**, would focus on industrial policy, creating a comprehensive and forward-looking ecosystem, and impact assessment. It would be led by **Stéphane Séjourné**, vice-president of the European Commission, and is expected to take place in the **third quarter of 2026**.

The EU Biotech and Life Science Alliance is established.

On 7 July 2025, the European Parliament announced that the **EU Biotech and Life Science Alliance** had been established, comprising a group of MEPs with an interest in biotechnology due to its impact on various sectors, and with the mission of **ensuring that Europe remains a world leader in biotechnology and the life sciences**.

The EC public consultation focused on regulation, access to capital, clusters, biomanufacturing, talent, data, AI, defence and security.

On 4 August 2025, the EC launched a **public consultation with the aim of gathering evidence and the views of stakeholders** from different sectors of biotechnology to identify the challenges and barriers that should be addressed by the future legislation.

This survey consisted of a questionnaire divided into nine sections, which sought to gather opinions on general perspectives on biotechnology, the regulatory environment in the EU, access to capital, views on the existence of biotechnology clusters and/or cluster organisations, biotechnology manufacturing, availability, professional development and reskilling of the workforce in biotechnology; data and artificial intelligence, and aspects relating to defence and security.

The draft regulations under the Biotech Act aim to boost funding, industrial capacity and competitiveness, accelerate innovation and reduce regulatory barriers.

On 16 December 2025, the European Commission finally published the draft Regulation, which focuses on six key areas:

Improving access to funding: Through financial incentives and a pilot programme for investment in healthcare biotechnology, to be rolled out in collaboration with the European Investment Bank Group from 2026.

Strengthening industrial and innovation capabilities: By creating centres of excellence in advanced therapies, testing and training facilities for biomanufacturing, data quality accelerators and biodefence projects. In this regard, biomanufacturing is being promoted through targeted support, and strategic 'high-impact' biotechnology initiatives will be designated as 'strategic projects'.

Promoting European innovation: By specifically extending patent rights for key innovations in healthcare and veterinary biotechnology, as well as support for strategic areas such as biosimilars. This way, strategic projects benefit from easier access to EU funding and faster administrative, scientific and regulatory support; and key innovations are rewarded with a specific extension of patent rights.

Promoting the use of artificial intelligence, data and digital solutions: Building on the roll-out of the European Health Data Space, creating reliable AI testing environments and targeted support for SMEs and start-ups to adopt high-performance technologies.

Simplifying and speeding up regulatory procedures: Reducing the time it takes for new biotechnology products to reach the market through harmonised requirements, controlled regulatory environments and single pathways for complex innovative products. EU legislation is being simplified to reduce costs and administrative burdens for businesses, while establishing single regulatory pathways for complex innovative products. Furthermore, it introduces regulatory sandboxes —controlled environments that allow companies to safely experiment with and test new solutions and technologies. It also seeks to speed up authorisation for multinational clinical trials, with a significant decrease in approval times, which could be cut, for example, from 75 to 47 days when no further information is required.

Ensuring biosecurity: With measures aimed at preventing the misuse of biotechnologies and strengthening the EU's biodefence capabilities. It includes proportionate biosecurity safeguards to protect human health against potential risks and the misuse of biotechnologies. This includes requiring verifying a legitimate need for biotechnological products with a high potential for misuse (such as DNA from dangerous pathogens) when they are purchased.

The new legislation also proposes specific amendments to other regulations relating to **advanced therapy medicinal products, substances of human origin, veterinary medicinal products, general food law**, human organs and **genetically modified organisms**.

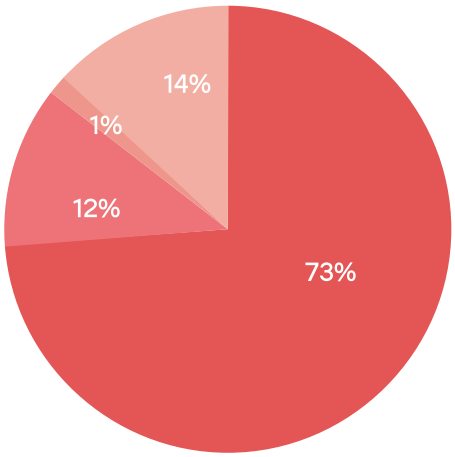
At the time of writing this year's AseBio Report, the consultation period for comments was open, running through July 2026. Following this, **the act will continue its way through the ordinary legislative procedure** involving the European Parliament, Council of the European Union and European Commission.

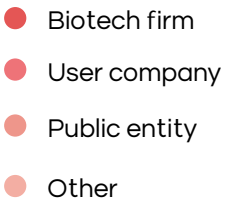
05.2. How the biotechnology sector sees its work environment.

This section looks at how AseBio members perceive the evolution of the biotechnology sector based on their opinions on a series of factors.

This year's survey had 81 participants, 73% were biotechnology companies, 12% were companies that use biotechnology, 14% were other sorts of organisations, such as private capital fund managers and private research centres and institutes; and 1% were public entities.

Table 5.1 shows the results of the survey rating 21 factors on the environment that affect the biotechnology sector. A rating of 1 or 2 is very negative or negative and a 3 or 4 is positive or very positive.





Graph 5.1. Breakdown of participants in the Perception of environment survey by type of organisation. Source: AseBio. 2025.

Public opinion of biotechnology was the most highly rated factor and the regulatory framework, the lowest.

Public opinion of biotechnology was the most highly rated factor. This factor has also been among the most highly rated since 2020, the year of the Covid-19 pandemic.

The number of bioentrepreneurs, internationalisation process, creation of new companies in Spain, and availability of specialised facilities such as technology and services centres were also rated highly by survey participants.

The areas with the lowest scores were the regulatory framework, cost of innovation and cooperation with universities/PRBs and technology centres. This year, the economic climate wasn't the worst-rated factor, but it is still among the lowest. What did rank last was the regulatory framework, most likely because 2025 saw more regulatory changes than any other year, both in Spain and in Europe.

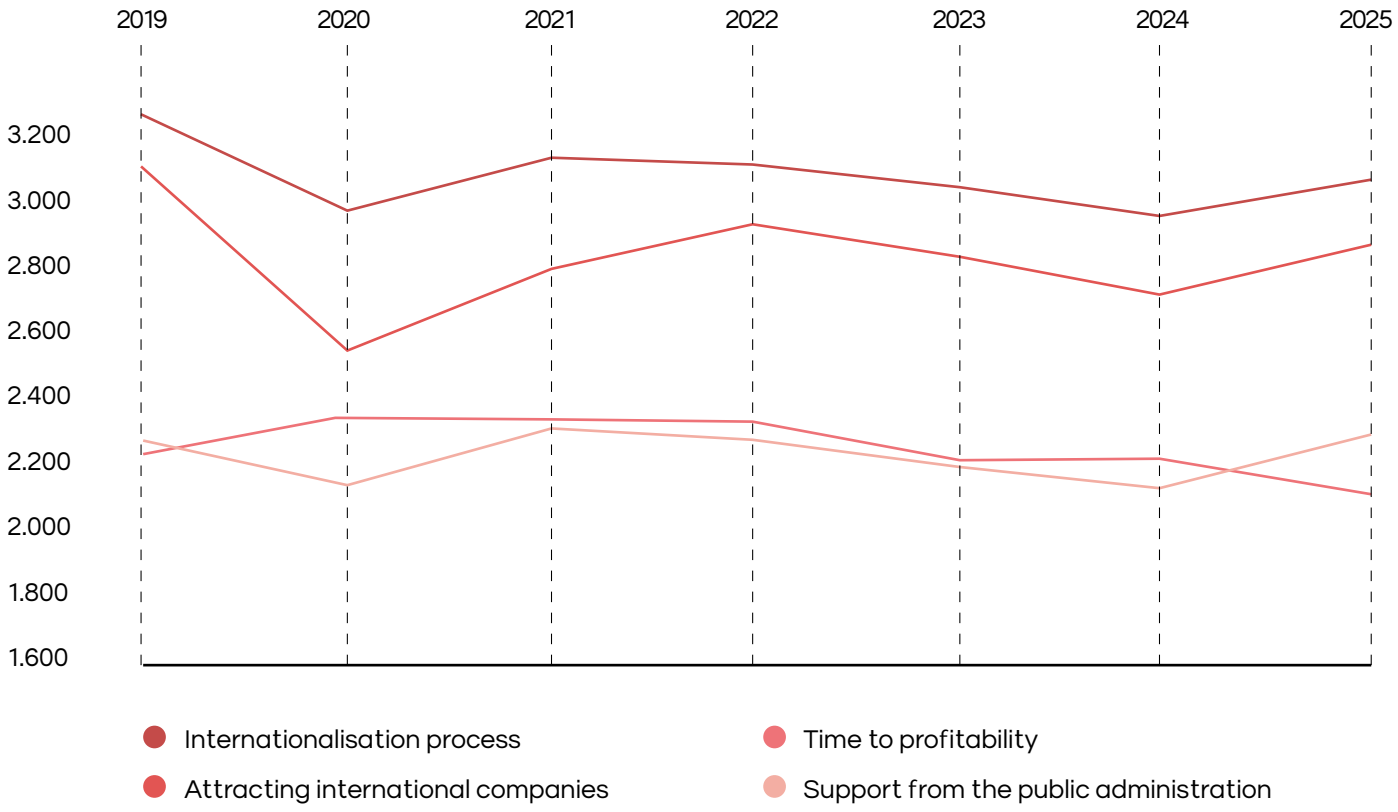
Factors	2025	2024	Average 2000-2025	% Variation 2024-2025
Public opinion of biotechnology	3.160	3.129	2.390	1.01%
Number of bioentrepreneurs	3.075	3.088	2.408	-0.42%
Internationalisation process	3.026	2.922	1.620	3.55%
Creation of new companies in Spain	3.013	3.022	2.810	-0.32%
Specialised facilities (technology centres, auxiliary services centres, etc.)	3.000	2.956	2.299	1.49%
Specialised suppliers (consultants, lawyers, etc.)	2.951	2.913	2.309	1.29%
Demand for more sophisticated products with higher value added	2.938	2.891	3.262	1.62%
Information on the biotechnology market	2.901	2.839	2.345	2.20%
Employee training level	2.886	3.250	3.783	1.54%
Attracting international companies	2.886	2.747	2.776	5.05%
Mergers/acquisitions/strategic partnerships	2.844	2.841	2.871	0.11%
Increase in average size of biotechnology companies	2.785	2.890	2.728	-3.64%
Market-orientated nature of the public technology offering	2.722	2.689	2.411	1.21%
Support from the public administration	2.333	2.185	1.105	6.80%
Qualified personnel	2.171	3.239	2.265	-2.37%
Time to profitability	2.171	2.276	2.195	-4.61%
Access to funding	2.152	2.130	1.333	1.01%
Economic situation	2.138	2.098	2.197	1.89%
Cooperation with universities/PRBs and technology centres	2.130	3.132	2.357	-0.27%
Cost of innovation	2.130	2.213	2.192	-3.78%
Regulatory framework	2.076	2.120	0.731	-2.06%

Table 5.1. Rating for factors, average and % change from previous year. Source: AseBio. 2025.

Perception of support from the public administration and attracting international companies improved.

Graph 5.2 shows the evolution of the factors that saw the biggest change from the previous year. Support from the public administration was the factor that changed the most, with positive responses up 6.80%. At the opposite end was Time to profitability, down 4.61% from the previous year.

The other two factors with the greatest positive change were Attracting international companies and the Internationalisation process, up 5.05% and 3.55% respectively.



Graph 5.2. Evolution of the factors: Internationalisation process, Attracting international companies, Time to profitability and Support from the public administration. 2019-2025. Source: AseBio.

Branded content

Elena Erroba,
CCO, 3PBIOVIAN

3PBIOVIAN

3PBIOVIAN: industrialising European biotechnology, from science to patients

European biotechnology is at a pivotal moment. Scientific excellence and the quality of innovation continue to rise, but the sector faces an increasingly clear structural challenge: transforming that expertise into medicines manufactured on an industrial scale, in accordance with stringent regulatory standards and reliable execution.

Nowadays, the success of a biotechnology project does not depend solely on scientific discovery. Industrialisation capacity has become a critical factor. The transition from the laboratory to clinical and commercial production determines timelines, costs and, ultimately, which innovative therapies are available to patients.

As projects progress through the clinical phases, the bar is set ever-higher for reproducibility, scalability and regulatory compliance with standards such as those set by the FDA and EMA. This leap requires integrated industrial expertise, highly skilled teams and ongoing support throughout the product lifecycle.

In this context, CDMOs have become a key part of the biotechnology ecosystem. Their role is no longer limited to carrying out processes; it is ensuring that scientific innovation is translated into products that are manufacturable, scalable and sustainable, while maintaining the highest standards of quality and safety.

A model for ongoing industrial support

For more than 30 years, 3PBIOVIAN has been operating at the intersection of science and industry, supporting its clients throughout the medicines value chain, from process development to clinical and commercial manufacturing, for both biologics and advanced therapies.

We see our relationship with clients as a long-term partnership. 3PBIOVIAN acts as a technological and industrial partner, becoming involved from the early stages to build robust, consistent, scalable processes, reducing risks as projects progress towards the clinical and commercial phases.

Integrated industrial infrastructure in Europe

3PBIOVIAN operates two industrial sites in Europe, in Pamplona (Spain) and Turku (Finland), and also has a commercial presence in the United States. The two GMP plants operate as an integrated system, following the same technical, regulatory and quality standards.

This model allows projects to progress smoothly between the two locations, combining operational flexibility, efficiency and regulatory rigour, and ensuring industrial consistency at all critical stages of development and manufacturing, including those specific to advanced therapies.

Industrial capacity and technology platforms

The company has a solid production capacity for recombinant proteins, with scales of up to 3,000 litres in bacterial systems and 2,000 litres in mammalian cells, supporting both advanced clinical phases and commercial production, as well as advanced therapy projects on various scales.

These capabilities are complemented by an integrated analytical package, which includes sterility testing and ensures process control, traceability and agile decision-making. With multiple expression platforms, it is possible to tailor the technological strategy to each molecule or therapeutic product.

In 2025, 3PBIOVIAN incorporated moss-based expression technology through a collaboration with German company Eleva Biologics, expanding its capacity to produce highly complex proteins that are difficult to express and opening up new therapeutic possibilities.

People, quality and industrial growth

The sites in Pamplona and Turku operate to the same quality standards, processes and regulatory criteria, ensuring consistency and reliability in both scale-up and commercial manufacturing. Building on this solid foundation, highly specialised professionals work in a coordinated manner, continuously sharing technical knowledge and industrial expertise.

3PBIOVIAN's growth is the result of a long history in the industry in Europe, spanning nearly two decades, which has allowed the company to build an organisation of more than 500 professionals and two GMP facilities.

Looking to the future

The future of European biotechnology will depend on the ability to consolidate industrial facilities capable of transforming scientific innovation into therapies that are available to patients. In this context, 3PBIOVIAN aspires to consolidate its role as a leading industrial player in Europe and to progressively strengthen its international presence, particularly in the United States.

Branded content

Jon Alberdi,
CEO, VIVEbiotech

VIVE biotech
GENE TRANSFER TECHNOLOGIES

VIVEbiotech: building the future of Spanish biotechnology under the Biotech Act

Since its foundation in 2015, VIVEbiotech SL has focused on producing lentiviral vectors under GMP conditions for use in ex vivo and in vivo cell and gene therapies to treat severe conditions. More than a hundred patients worldwide have been treated with therapies that our lentiviruses have helped to develop.

VIVEbiotech has now consolidated its place as a leading international CDMO, working with more than 50 clients in the United States, Europe, Asia and Australia, including leading pharmaceutical companies. Over the years, we have manufactured more than 50 batches in accordance with GMP standards, supporting projects from the early stages of development through to advanced clinical trials and commercial scale-up. Our exclusive specialisation in lentiviral vectors, combined with our solid background in virology, allows us to develop solutions that are highly tailored to each client's needs, in both ex vivo and in vivo applications —a field in which we hold a particularly prominent position globally.

We have state-of-the-art facilities with multiple cleanrooms and operate in accordance with the most stringent regulatory standards (FDA and EMA), having successfully passed numerous international audits. All of this enables us to guarantee the highest standards of quality, safety and reproducibility in our processes. This approach, together with our ongoing commitment to innovation and process optimisation, has allowed us to achieve very significant growth in recent years, in line with the global expansion of the advanced therapies sector.

In this context of growth, in December 2024 VIVEbiotech took a key strategic step forward, with investment from Ampersand Capital Partners, an international private equity firm specialising in the life sciences. This investment will allow us to significantly expand our development and manufacturing capabilities in San Sebastián and accelerate implementation of a robust portfolio of projects in advanced therapies. By strengthening our structure and bringing on board top-notch industrial expertise, VIVEbiotech is poised to consolidate its global leadership in producing lentiviral vectors and meeting the sector's growing demand.

Over the 10 years since VIVEbiotech SL was founded, the world has undergone profound geostrategic changes. The pandemic, the rise of AI and successive wars have posed —and continue to pose— a challenge to Europe's political autonomy, particularly in areas of strategic importance, such as health and the economy. Biotechnology is undoubtedly one of these areas.

The Biotech Act was introduced with the aim of boosting the productivity and biomanufacturing capacity of European biotechnology companies in order to make them more competitive and help build value chains. The Biotech Act could be an authentic, real, European industrial policy in the field of advanced therapies, transforming the excellent science and hospital care on our continent into prosperity and well-being for citizens.

VIVEbiotech SL aims to help achieve strategic autonomy and play an active, significant role in the European economic landscape that emerges from this initiative, while maintaining its position as a global player in the field of therapies involving the use of lentiviral vectors.

Results

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06. Results

In this section, we describe the key performance indicators for the biotechnology sector, both in terms of knowledge generation, production and quality of scientific publications, and of technological innovation and patents. It also includes companies' research advances, the progress of studies, regulatory authorisations and expanded capacities. Finally, it looks at products and services launched to market and licensing deals.

06.1. Production of scientific knowledge.

Spanish biotechnology makes up 2.5% of global output in this area and is cited 16% more than the global average.

In 2024, scientific output in biotechnology made up 1% of all scientific output in Spain, with 1,192 papers, and 2.5% of global scientific output in this area (graph 6.1).

The normalised impact of biotechnology scientific output in Spain was 1.16 in 2024, which means it is cited 16% more than the global average in this area.

The quality of research in biotechnology can be judged by observing the number of documents published in high-impact journals. In 2024, of the 1,192 scientific papers produced by Spanish institutions in biotechnology, 719 were published in journals ranked in the first quartile (Q1) by impact factor, or 60.7%, which is three points higher than the Spanish average across all fields of knowledge.

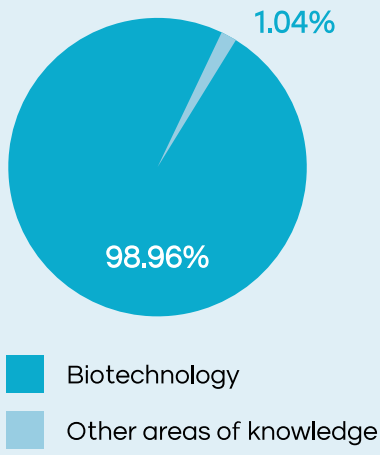
Another way to measure the quality of research in biotechnology is to look at the number of excellent publications, those among the top 10% most cited in the world in this area. Spain produced 218 documents of excellence in biotechnology in 2024, 18.3% of all papers published in this area in Spain. This percentage of excellence in biotechnology is well above the Spanish average for all scientific areas (12.6%).

Productivity

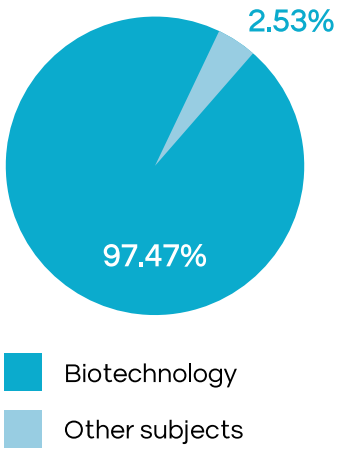
Graph 6.1. Bibliometric overview of Spanish research in biotechnology, 2014-2024. Source: FECYT, from data using the SciVal-SCOPUS tool in March 2026.

Papers
- 2024: 1,192
- Cumulative 2014-2024: 12,009 papers

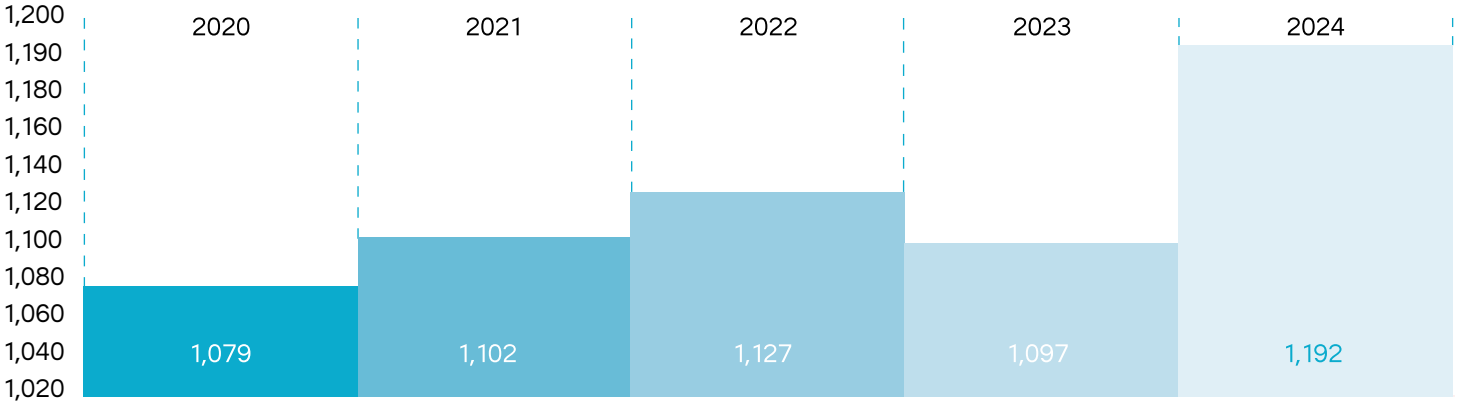
Percentage of the Spanish scientific output



Percentage of the international scientific output

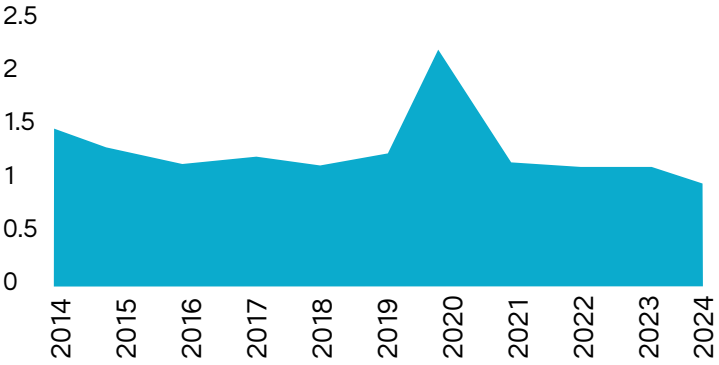


Evolution of number of documents:



Impact

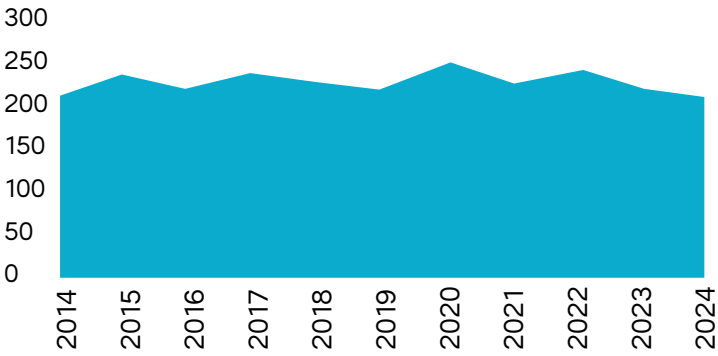
Normalised impact
Biotechnology: 1,16



Spanish scientific output: 1.16

Excellence

Articles of scientific excellence (10% most cited)
Biotechnology: 218



Cumulative biotechnology (2014-2024): 2.563% of Spanish biotechnology output (2024): 18.3% (12.6% Spanish average)

Spain remains ranked ninth in the world in number of papers in biotechnology and third in quality.

Spain was again ranked ninth in the world in number of papers in biotechnology. China and the United States still have the highest output in terms of number of documents in this area.

In terms of biotechnology as a percentage of all scientific output in the country, Spain is ranked seventh with 1.10%. In this case, South Korea and India lead the ranking.

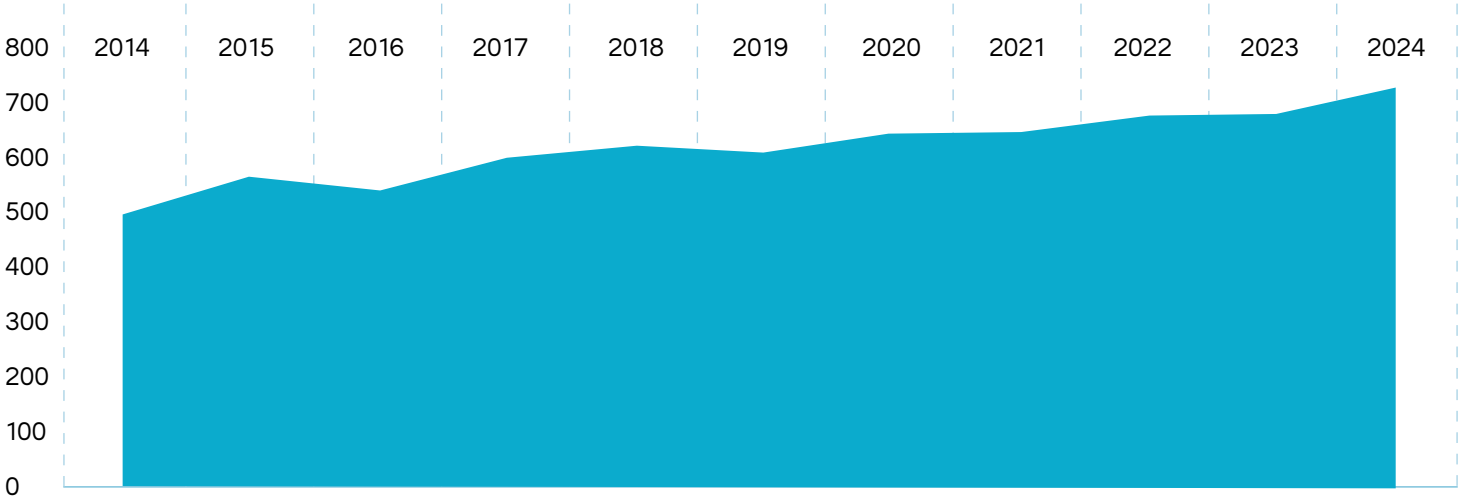
Judging the quality of the research, if we look at the number of publications in high-impact journals, Spain is ranked third with 63%, with the United States and United Kingdom at the top of the list. In terms of publications of excellence, Spain is fourth with 21.3% of publications in the field, with the United Kingdom, China and the United States at the head of the ranking. Finally, looking at normalised impact, Spain is third (1.37) and the ranking is once again led by the United Kingdom and United States.

Country	Number of documents	Number of documents in biotechnology	Scientific production in biotechnology as a percentage of total scientific output (%)	Normalised impact of biotechnology	Scientific output in biotechnology in high-impact journals (Q1) (%)	Scientific output in biotechnology of excellence (%)	Scientific output in biotechnology as part of international collaboration (%)
China	8,259,463	129,878	1.57%	1.31	53.60%	23.40%	21.51%
United States	6,740,341	67,374	1.00%	1.54	65.80%	23.10%	46.50%
India	2,142,417	40,360	1.88%	0.81	20.90%	13.90%	19.10%
South Korea	988,093	22,406	2.27%	1.05	42.30%	16.70%	27.60%
Germany	1,908,323	22,312	1.17%	1.4	62.20%	19.60%	54.70%
United Kingdom	2,075,378	18,415	0.89%	1.55	65%	23.90%	69.50%
Japan	1,413,592	17,917	1.27%	0.9	39.50%	9.70%	33.90%
Italy	1,329,831	12,837	0.97%	1.33	53%	20.50%	50.50%
Spain	1,087,444	12,009	1.10%	1.37	63%	21.30%	57.10%
Iran	687,510	11,795	1.72%	0.95	24.90%	17.50%	26.70%

Table 6.1. Top 10 countries in scientific output in biotechnology. 2014-2024. Source: FECYT.

58.8% of Spanish scientific output in biotechnology is done as part of an international collaboration.

International collaboration in Spanish scientific output in biotechnology has grown steadily in recent years. The percentage of documents on biotechnology authored jointly by Spanish and foreign institutions made up 58.8% of the total in 2024, with 701 documents (graph 6.2). For every year in the period analysed, the percentage of Spanish scientific output in biotechnology published as part of an international collaboration was above the Spanish average, which was 51.7% for 2024.



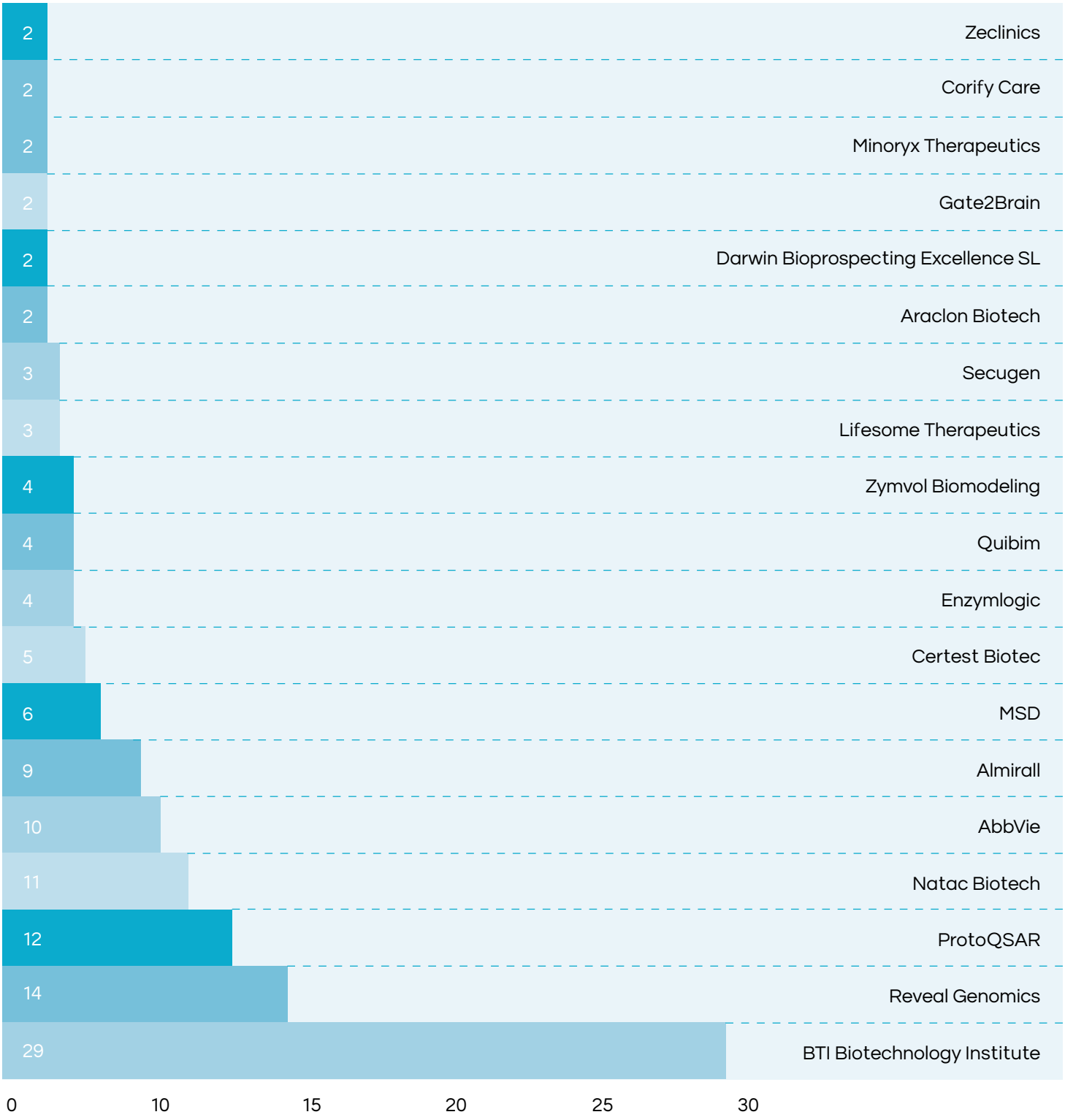
Graph 6.2. Evolution of co-authored papers (2014-2024). Source: FECYT.

AseBio members published 138 papers in biotechnology.

Every year, AseBio surveys its members, both Spanish companies and multinational corporations with offices in Spain, on their publications in high-impact science journals.

In 2025, these companies published 138 papers. As graph 6.3 shows, BTI Biotechnology Institute continues to hold the top spot with 29 publications, followed by Reveal Genomics with 14, ProtoQSAR with 12, Natac Biotech with 11, AbbVie with 10 and Almirall with 9.

Additionally, although not included in this ranking, the publications by other AseBio member organisations are worth noting: the Health Research Institute Hospital La Fe with 853 publications, Centre for Genomic Regulation with 201, Tecnalia and Leitat with 30 each, CICYTEX with 16, Spanish Association Against Cancer with 7, Catalan Institute of Chemical Research with 5, and both Ainia and Fundación MEDINA with 2.



Graph 6.3. Number of biotechnology papers published in 2025 by AseBio member companies. Source: AseBio.

06.2. Technological innovation.

In collaboration with:

FUNDACIÓN Parque Científico de Madrid

Clarke Modet +

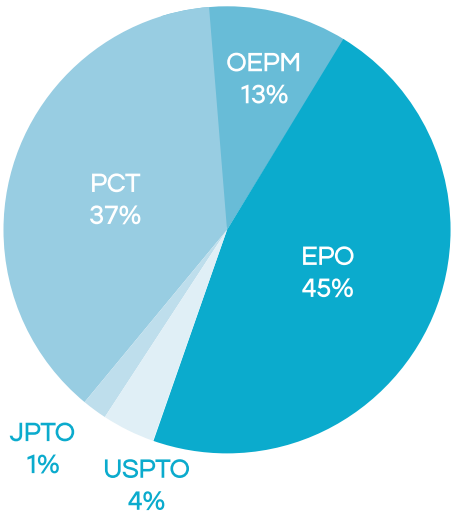
The biotechnology sector patents in Europe and internationally.

In 2025, we counted 586 patent applications and 150 patents granted in Spain. Patents with a Spanish priority claim or stakeholder and client in the biotechnology sector were identified through the various patent offices: Spanish Patent and Trademark Office (OEPM), European Patent Office (EPO), United States Patent and Trademark Office (USPTO), Japan Patent Office (JPO) and the World Intellectual Property Organization (WIPO).

The sector continues choosing to protect its innovation mainly internationally, through the EPO and international PCT patents (table 6.2), which has been the trend since 2013. In 2025, 263 patent applications were filed with the EPO, 125 via the PCT, followed by 75 with the OEPM, 27 with the USPTO and 6 with the Japanese patent office.

Patents published	OEPM	EPO	USPTO	JPTO	PCT	TOTAL
Applications	75	263	27	6	215	586
Granted	46	86	13	5	(NA)	150
TOTAL	121	349	40	11	215	736

Table 6.2. Number of patent applications and patents granted to Spanish biotechnology organisations (2025) Source: ClarkeModet – FPCM.

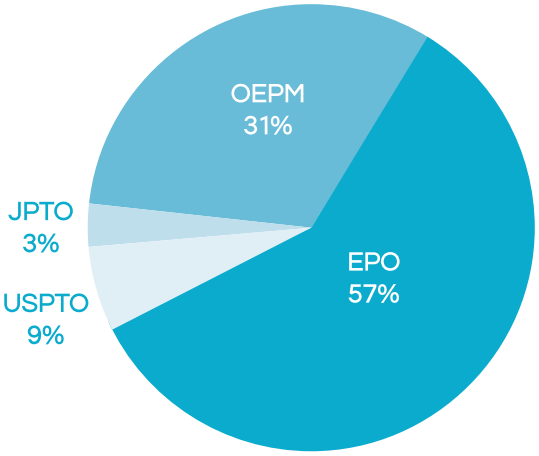


The sector chose to protect innovations on a European level, with 234 patents, and through PCT patents, 186; while only 70 patents were issued through the Spanish Patent and Trademark Office.

Graph 6.4 shows that the highest percentage of patent applications in the biotechnology sector were filed with the EPO, 45%, followed by PCT patent applications at 37%. To a lesser degree, patent applications were filed with the OEPM (13%), the USPTO (4%) and, in last place, the Japanese patent office (1%).

Graph 6.4. Biotechnology patent applications (2025). Source: ClarkeModet – FPCM.

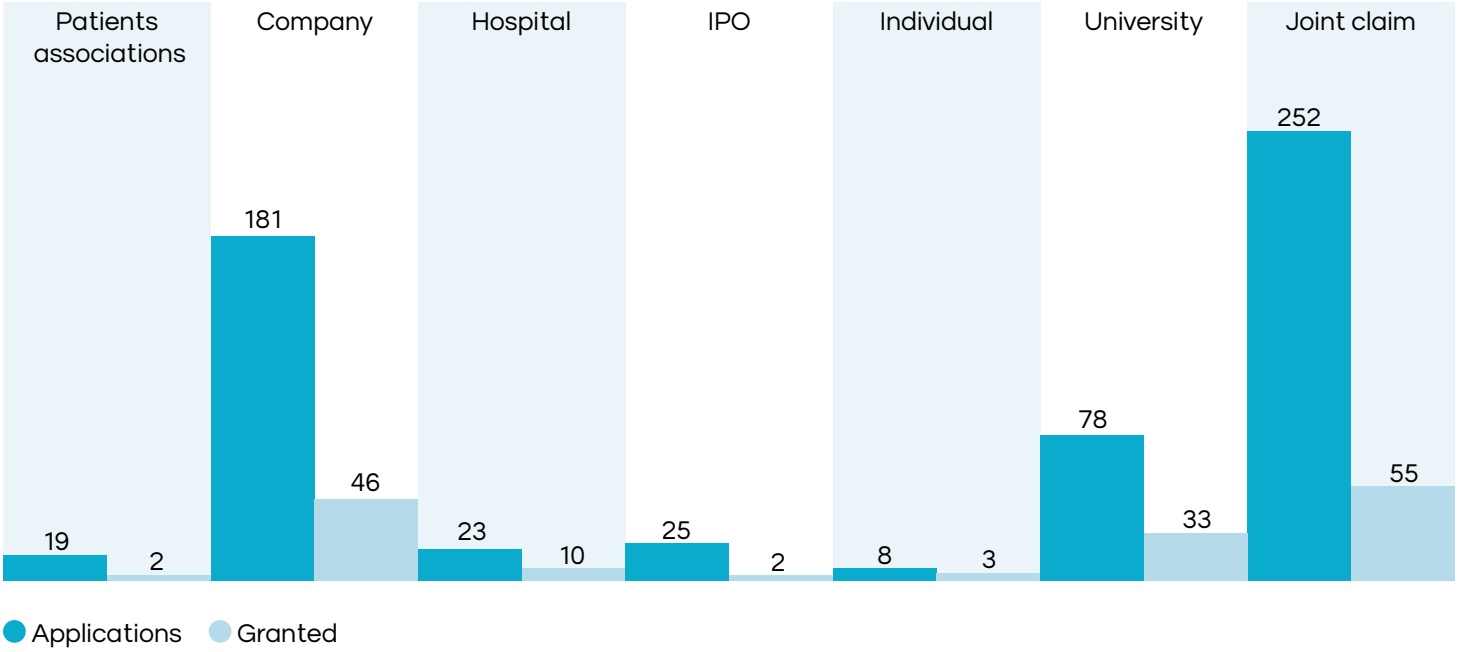
Regarding patents granted, graph 6.5 shows EPO patents remain in first with 57%, followed by OEPM patents with 31%. These two are trailed by patents granted by the USPTO, at 9%, and those granted by the Japanese Patent Office (JPTO), at 3%.



Graph 6.5. Biotechnology patents granted (2025). Source: ClarkeModet – FPCM.

The sector mainly patents in collaboration with public entities.

In terms of biotechnology patents, joint claims remain in first place with 252 applications and 55 patents granted. These are followed by companies acting alone, with 181 applications and 46 patents granted.

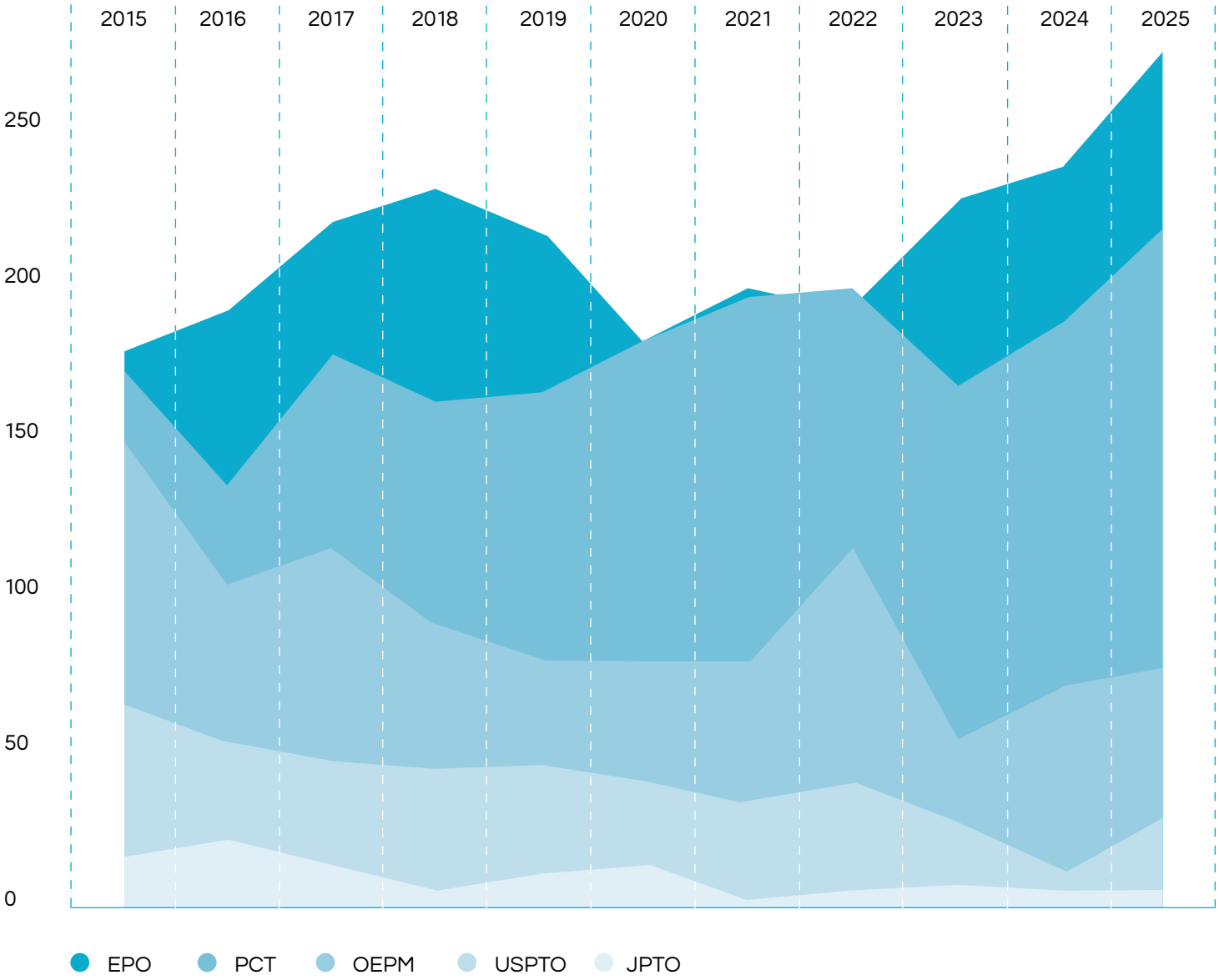


Graph 6.6. Holder of patent applications and patents granted (2025). Source: ClarkeModet – FPCM.

International patents remain ahead of national ones.

Graph 6.7 shows the evolution of patent applications since 2015.

In 2023, there was a significant drop in the number of patent applications filed with the OEPM and via the PCT, although this trend was reversed in the following years. Meanwhile, the number of patent applications filed with the EPO has grown steadily since 2022. As for US patents, there was a slight increase, from 16 to 27. Finally, the number of patent applications filed with the JPTO has remained unchanged since 2022.



Graph 6.7. Evolution of patent applications published (2015-2025). Source: ClarkeModet – FPCM.

06.3. Advances in development.

Biohealth

AbilityPharma published the final data from its Phase I/IIa ENDOLUNG trial evaluating ibrilatazar (ABTL0812) in combination with chemotherapy (paclitaxel/carboplatin) in patients with stage III/I non-small cell squamous cell lung cancer (sq-NSCLC).

ADmit Therapeutics announced the results of its study on the MAP-AD® test, a prognostic solution based on mitochondrial DNA methylation levels in blood that predicts progression to Alzheimer dementia in patients with mild cognitive impairment (MCI).

Almirall presented data from Phase IV trials on tirbanibulin to treat actinic keratosis, showing high levels of efficacy, and data from the Phase I trial on the drug LAD191, a high-affinity monoclonal antibody targeting IL-1RAP (Interleukin-1 receptor accessory protein), with the potential to treat immune-mediated skin diseases by blocking multiple pro-inflammatory pathways.

Biohope published a new study showing that an in vitro blood test can be used to predict response to the drug methotrexate in patients with early-stage rheumatoid arthritis.

Biofabri, with IAVI, launched the IMAGINE clinical trial to assess the safety and efficacy of the tuberculosis vaccine in adolescents and adults.

CONNECTA Therapeutics announced positive results from its Phase I clinical trial to assess the safety, tolerability and pharmacokinetic profile of its drug candidate CTH120, which modulates key neuroplasticity in attention deficit hyperactivity disorder (ADHD), Down syndrome and fragile X syndrome (FXS).

Genomcore launched the OSAGEN project, which aims to bring about the digital transformation of the healthcare sector through advanced genomic data management.

Grifols published positive results from the Phase III fibrinogen trial, demonstrating that the fibrinogen concentrate BT524 was not inferior to standard treatment to manage bleeding in acquired fibrinogen deficiency (AFD). Plus, the company completed recruitment of the second cohort for its clinical trial on subcutaneous administration of Alpha-1 15% for patients with alpha-1 antitrypsin deficiency, and presented results from a Phase 2/3 trial on its immunoglobulin therapy in patients with post-polio syndrome. It also launched a study to detect early signs of Parkinson's disease by analysing plasma samples.

Laminar Pharma reported positive results from its clinical trial evaluating LAM561 to treat newly diagnosed glioblastoma (ndGBM), the most aggressive form of brain cancer.

Lilly Spain presented the results of its three-year SURMOUNT-1 study, which confirm that a significantly higher proportion of obese or overweight adults with prediabetes who were treated with tirzepatide (Mounjaro®) achieved the combined clinical goal of weight loss, lower blood pressure and lower non-HDL cholesterol. It also presented results from the ESPADA real-world study, which aims to assess the profile of patients with axial spondyloarthritis (axial SpA) treated with ixekizumab (IXE)3, a monoclonal antibody that binds specifically and with high affinity to interleukin-17A.

Minoryx Therapeutics announced it had recruited the first patient for its TREE Phase II trial, to be treated with leriglitazone for Rett syndrome.

Oryzon announced it had recruited the first patient for a Phase I clinical trial on iadademstat for myelodysplastic syndrome and for its Phase I/II trial on iadademstat plus immune checkpoint inhibitors in first-line treatment of metastatic small cell lung cancer. Plus, it presented the final results of the Phase IIa REIMAGINE study with vafidemstat, which examined aggression in adult patients with borderline personality disorder (BPD), attention deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD). It also presented the results of its study on vafidemstat in patients with Phelan-McDermid syndrome (PMS), a form of autism.

Palobiofarma concluded its research project into a dual A2A/H3 receptor antagonist for Parkinson's disease and completed Phase 2 trials on PBF-999 in patients with Prader-Willi syndrome (PWS), a rare genetic disorder that causes a wide range of physical, cognitive and behavioural problems.

Reveal Genomics presented the results of various studies designed to assess the clinical utility of HER2DX in early-stage HER2-positive (HER2+) breast cancer.

- Regulatory authorisations

Amgen received approval from the European Commission for blinatumomab as monotherapy as part of the consolidation treatment for recently diagnosed adult patients with Philadelphia chromosome-negative and CD19-positive B-cell precursor acute lymphoblastic leukaemia. Plus, it presented findings from the MINT study in myasthenia gravis patients with AChR+ antibodies, showing improvement following administration of inebilizumab twice a year after an initial loading dose.

Corify Care completed the DIDIMO project (Personalised Cardiac Digital Twin to Improve the Development of Medical Devices and Cardiac Anti-arrhythmic Treatments), which aims to develop a personalised cardiac digital twin tool that integrates patient-specific electrical and structural data.

Gate2Brain was granted FDA orphan drug designation for G2B-002 as a paediatric treatment for brain cancer.

Grifols received FDA approval to begin a Phase 2 trial on an immunoglobulin eye drop for dry-eye disease.

HIPRA received approval from the European Commission to market its Covid-19 vaccine, which has been adapted to target the LP.8.1 variant, produced entirely in Spain and intended to immunise people aged 16 and over. Plus, it signed a joint procurement contract for this vaccine for the 2025–2026 campaign.

mAbxience received approval from the European Commission for the denosumab biosimilars Denbrayce® and Izamby®. Denosumab is a human monoclonal antibody that works by inhibiting the receptor activator of nuclear factor kappa-B ligand (RANKL), preventing the development of osteoclasts, the cells that dissolve and break down bones.

Quibim received authorisation from the US Food and Drug Administration (FDA) to market QP-Prostate®, a solution for detecting prostate cancer lesions, in the United States.

Sanofi received approval from the European Commission for Sarclisa® (isatuximab) in combination with the standard treatment of bortezomib, lenalidomide and dexamethasone (VRd) for adult patients with newly diagnosed multiple myeloma (NDMM) who are not candidates for autologous stem-cell transplantation (ASCT).

- Expanded capacities

Algenex announced an investment of €25 million to upgrade its R&D facilities and construct a new production building.

Biomixing announced the launch of its new laboratory, which will enable it to continue advancing in validating solutions to optimise its bioreactor processes.

Grifols announced the construction of a new plant in Lliçà de Vall (Barcelona) to double its plasma fractionation capacity in Europe. It will start operating in 2030 and allow the company to produce more plasma-derived medicines to meet demand for these treatments.

Merck invested an additional €5 million in its biotechnology plant in Tres Cantos, on top of the more than €60 million the company has invested in its three plants over the last five years. This investment will be used to increase the production capacity of its growth hormone.

Agrifood

AINIA launched the BIOPROSPECT project to identify and use microorganisms from little-explored ecosystems, offering new technological solutions in sectors such as food, healthcare and the biotechnology industry. Plus, it presented the results of its AIRPROT project, which has yielded new, alternative and sustainable ingredients through air classification, and of its PHARMANOVA II project, through which it has developed new biotechnology solutions based on plant waste to treat inflammatory bowel diseases such as ulcerative colitis and Crohn's disease. Finally, the company completed its RAMDETEC project, which focused on R&D into technologies for early detection and control of resistant bacteria in food products.

AMSlab presented progress on its SmarTZ4Milk project, which uses its development method to simultaneously detect 20 milk proteins, including variants of interest such as A1 and A2 beta-caseins.

Bayer presented updates on Preceon™, the new corn cultivation system that has been shown to deliver significant benefits for more sustainable corn production.

Tecnalia joined the BIWIN2 initiative, which focuses on the valorisation of local waste biomass, particularly from the wine industry, which is rich in sugars and lignocellulosic compounds. Using bioprocesses and advanced technologies, the initiative will develop biopolyesters and cellulose micro- and nano-reinforcements, with applications in key sectors such as biodegradable food packaging and coatings for the automotive industry.

ZENDAL received EMA approval recommendation for its vaccine for epizootic haemorrhagic disease (EHD), HEPIZOVAC, which is pioneering in its ability to prevent viremia caused by serotype 8 of the EHD virus in cattle.

06.4. Product launches.

In this section, we analyse the products and services launched to market by AseBio members and some of the most noteworthy deals to licence or distribute these products and services.

Products launched to market.

Cocoon Bioscience launched a new recombinant enzyme developed with its CrisBio® platform: T4 DNA ligase, which plays a crucial role in cloning, sequencing and gene therapy development. It also announced the launch of a thermostable inorganic pyrophosphatase for RNA and gene synthesis, DNA polymerisation reactions and inorganic pyrophosphatase (PPi) hydrolysis, that is more readily available, adaptable in production and meets high quality standards.

Bayer launched a new digital platform that improves farm management by connecting farmers with agricultural technicians in real time for guidance.

Biomol, in collaboration with the Haematology Department at Jerez University Hospital, developed a comprehensive diagnostic workflow for Philadelphia-negative myeloproliferative neoplasms (Ph- MPNs).

Biolan launched a digital platform to improve quality of life by monitoring human frailty associated with ageing. It also launched the new BIOMEAT 7000 system for nitrite control in the meat sector, the BIOMILK 7000 SAL device for sodium control in the dairy industry, and the BIOFISH 7000 TMA, an enzymatic biosensor to determine the amount of trimethylamine at any point in the value chain.

Nucaps launched UHTCAPS, an R&D project with industrial applications that adapts its microencapsulation technology to incorporate probiotics and bioactive compounds into UHT liquid foods without losing their functionality.

Reig Jofre launched Vincobiosis® Acneic acne-prone skincare. It is based on Canonia Allysis®, a biotechnology ingredient developed by Vytrus Biotech through a process that selects the natural defence mechanisms used by certain plants to fight bacterial infections and external threats, helping restore balance to the cutaneous microbiota.

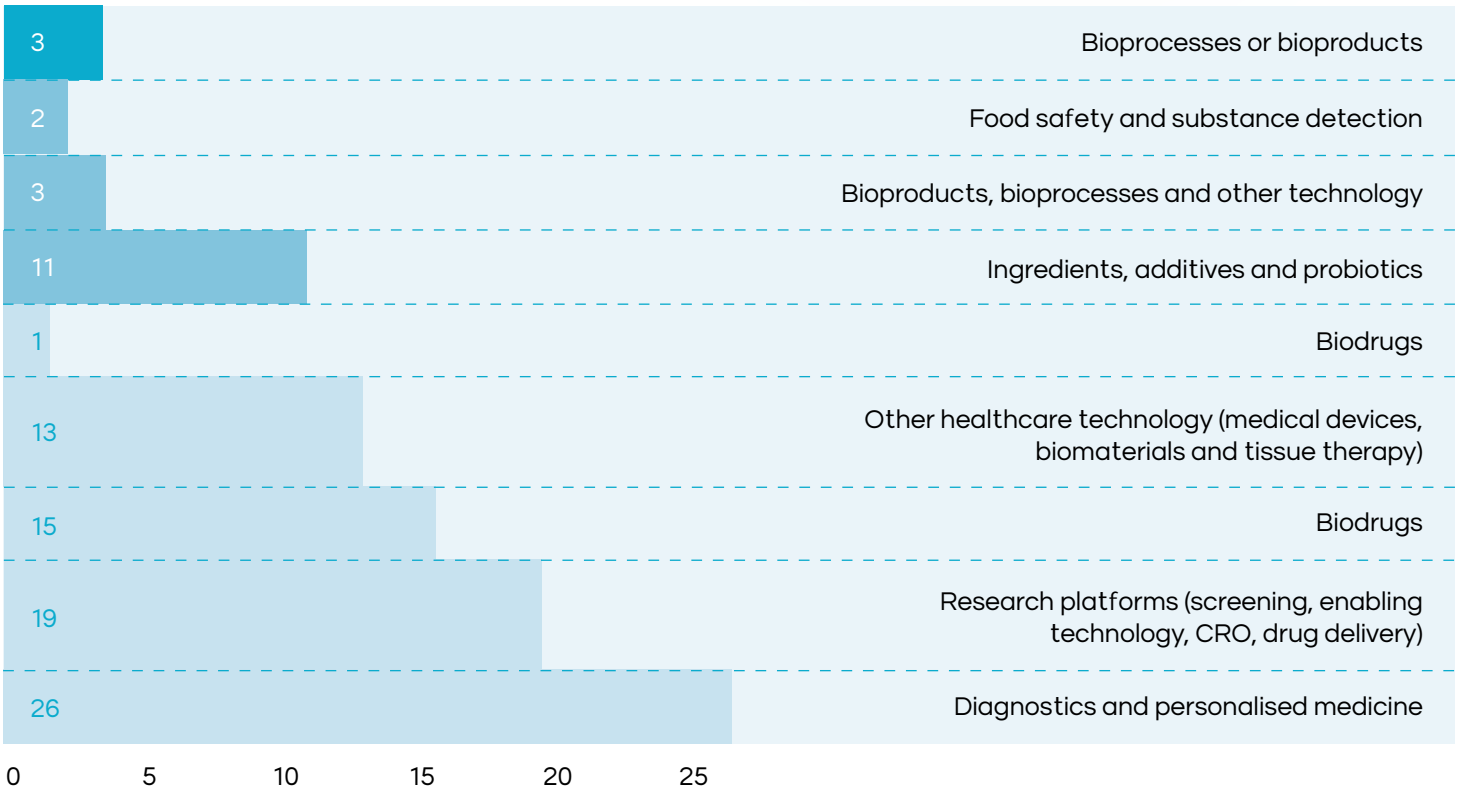
Licensing and distribution deals.

mAbxience announced a licensing agreement for its biosimilar candidate to be marketed in Italy through Abiogen Pharma and in south-eastern Europe through Corapharm.

AseBio members launched 93 products and services to market.

For 2025, we identified 93 products or services launched to market by AseBio members, down 28% from the previous year.

Graph 6.8 shows the breakdown by area of activity. Diagnostic and personalised medicine products were ranked first, followed by health research platforms. Noteworthy in the agrifood sector were the 11 ingredients or probiotics launched to market by AseBio members.



Graph 6.8. Breakdown by area of activity for products and services launched to market by AseBio members in 2025. Source: AseBio.

Branded content

Marta del Castillo Vázquez,
CEO, Madrid Science Park Foundation

FUNDACIÓN
Parque Científico
de Madrid

Ushering in a new era for biotechnology innovation in Europe

Despite the scientific strength in Europe, and particularly Spain, we have increasingly found other regions successfully competing in the development of innovative products, which have left us behind in terms of industrial scale-up and global market leadership. A fragmented regulatory framework, limited funding at more advanced stages of development and lengthy administrative procedures are the main obstacles to progress in Europe.

As early as 2024, reports by Letta and Draghi recommended greater integration and more flexible regulation within the European Union, in order to facilitate scientific development and innovation on our continent. In response to these reports, in December 2025, the European Commission published the **European Biotech Act,** establishing a series of measures to strengthen the biotechnology and manufacturing sectors, particularly in healthcare. This proposal is a significant legislative step towards improving the conditions under which healthcare biotechnology is developed, scaled up and brought to market in the European Union.

We are currently in the initial phase of implementing the European Biotech Act, which covers the entire life cycle of healthcare biotechnology products and services, from early-stage research and funding for their development, through to manufacturing, authorisation and use. The plan is to move on to a second proposal in the third quarter of 2026, which will cover a broader spectrum of the biotechnology ecosystem, including agriculture, energy, defence and industrial biotechnology.

Here at the Madrid Science Park, we welcome these measures with great enthusiasm, given the opportunity they offer to support the development of biotechnology start-ups, which account for more than 40% of the companies incubated at the Park. Most of these companies are deep tech firms, developing disruptive technologies that require lengthy processes and ongoing funding beyond the first years after being set up. This is a major challenge: the need to allocate more funding to scale-ups, not just to start-ups in their first three years.

Furthermore, the regulations governing venture capital funds in Spain, and in Europe in general, need to be reviewed and brought into line with the changing needs of these companies, incentivising private funds to invest in biotechnology and at more advanced TRLs. The European Biotech Act could mark a turning point for this sector in Spain.

The essential pillars of this initiative include regulatory simplification, its approach to phased implementation, support for innovation and access to funding, and high safety, ethical and environmental standards, facilitating the European Union's strategic autonomy.

However, there are still areas that need to be addressed simultaneously to ensure this European initiative is implemented successfully. On the one hand, determining the strategic nature of the projects, and on the other, the complexity of implementation in EU Member States, where effective implementation of the Biotech Act depends on national administrative procedures.

While we welcome the paradigm shift that places greater emphasis on the strategic nature of a project beyond mere regulatory compliance, that strategic nature will need to be defined in terms of thresholds and selection criteria. It will be necessary to remove any ambiguity and provide guidance through specific implementation metrics that enhance legal certainty. What's more, it will be crucial to take into account the multinational nature of the EU, strengthening coordination on a European level.

In short, the European Biotech Act opens a window of opportunity to strengthen our capacity to innovate in Spain, as an EU Member State; compete globally and continue transforming biotechnology into real benefits for society on a larger scale.

Branded content

Dr. Eduardo Anitua,
President, BTI Biotechnology Institute

bti
Biotechnology Institute

Biotech Act: a new opportunity for Spanish biotechnology

Europe has finally realised something that BTI has been advocating for years: it is not enough simply to generate scientific knowledge of excellence; we must also create the conditions to transform it into useful innovation, an industrial fabric and real solutions for people's health and well-being. In this regard, the Biotech Act sends out an important political message. It is recognition that biotechnology is not a peripheral sector, but a strategic field for Europe's competitiveness, technological autonomy and economic and healthcare future.

For Spain, this initiative opens up a particularly important opportunity. Our country has scientific talent, top-level research groups and companies capable of developing their own technologies with an international impact. However, it also suffers from structural weaknesses that have for years hampered the growth of this type of project: complex regulatory frameworks, lack of funding, shortage of advanced facilities and a culture that still falls short in terms of sustained support for innovation.

I speak from experience. BTI was not set up as a conventional commercial venture, but rather as a means of organising and funding research. Following an initial phase that began in 1989, in 1999 we established BTI as a company designed to turn clinical issues into knowledge, and knowledge into therapeutic solutions. Since then, we have remained firm in our conviction: reinvesting in research to keep advancing. This model has enabled us to grow, internationalise and contribute to the development of technologies in fields such as oral implantology and regenerative medicine.

But we have also experienced the difficulties of setting up a biotechnology company in Spain first-hand. Research takes time, resources, stability and vision. Scaling up an innovation requires much more than just a good idea: it needs funding, legal certainty, streamlined regulatory dialogue and industrial capacity. For years, we have had to operate in an environment in which, all too often, innovation has outpaced the regulatory framework that should have supported it.

This is why the Biotech Act can make a difference. If it is developed with ambition and common sense, it can foster a more favourable ecosystem for companies that, like BTI, have made a sustained commitment to applied science. Creating strategic projects, promoting biomanufacturing, improving access to funding, regulatory simplification, early-stage support mechanisms and the use of artificial intelligence can accelerate the transition from the laboratory to clinical practice and industrial production.

For a company such as BTI, this could lead to new opportunities to strengthen research capabilities, expand infrastructure, accelerate development of innovative solutions and further consolidate our international presence. However, looking beyond any specific company, what really matters is that this law can help many more companies like BTI to emerge and grow: solid scientific projects, deeply rooted in the local area, capable of generating knowledge, skilled employment and social value.

Looking back, it is impossible not to wonder what a Biotech Act like this would have meant two decades ago. A more favourable environment would probably have enabled many Spanish biotechnology companies to grow sooner and with fewer obstacles.

The Biotech Act will not, on its own, resolve all the challenges facing the sector, but it could mark a turning point. The key will lie in how it is implemented and whether Member States, including Spain, are able to translate this European impetus into concrete, coherent, long-lasting policies. Biotechnology requires long-term vision. And Europe seems to have realised that investing in it is not a choice: it is a necessity.

Collaboration and internationalisation

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07. Collaboration and internationalisation

07.1. Collaboration

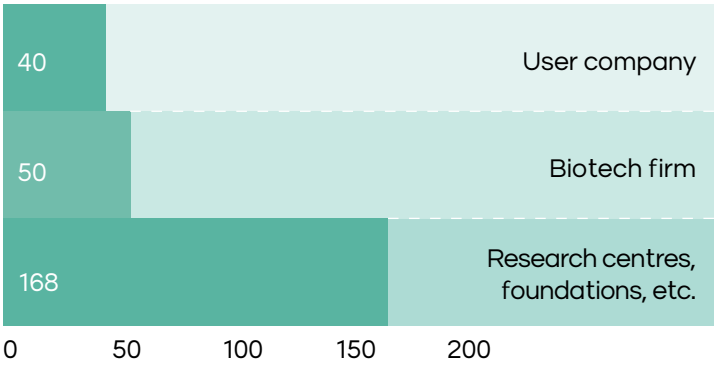
Each year, the AseBio Report compiles the main partnerships or collaborations of biotechnology companies as a key element for advancing their research, analysing the participants in these partnerships, their country of origin and purpose.

In 2025, 266 partnerships were forged.

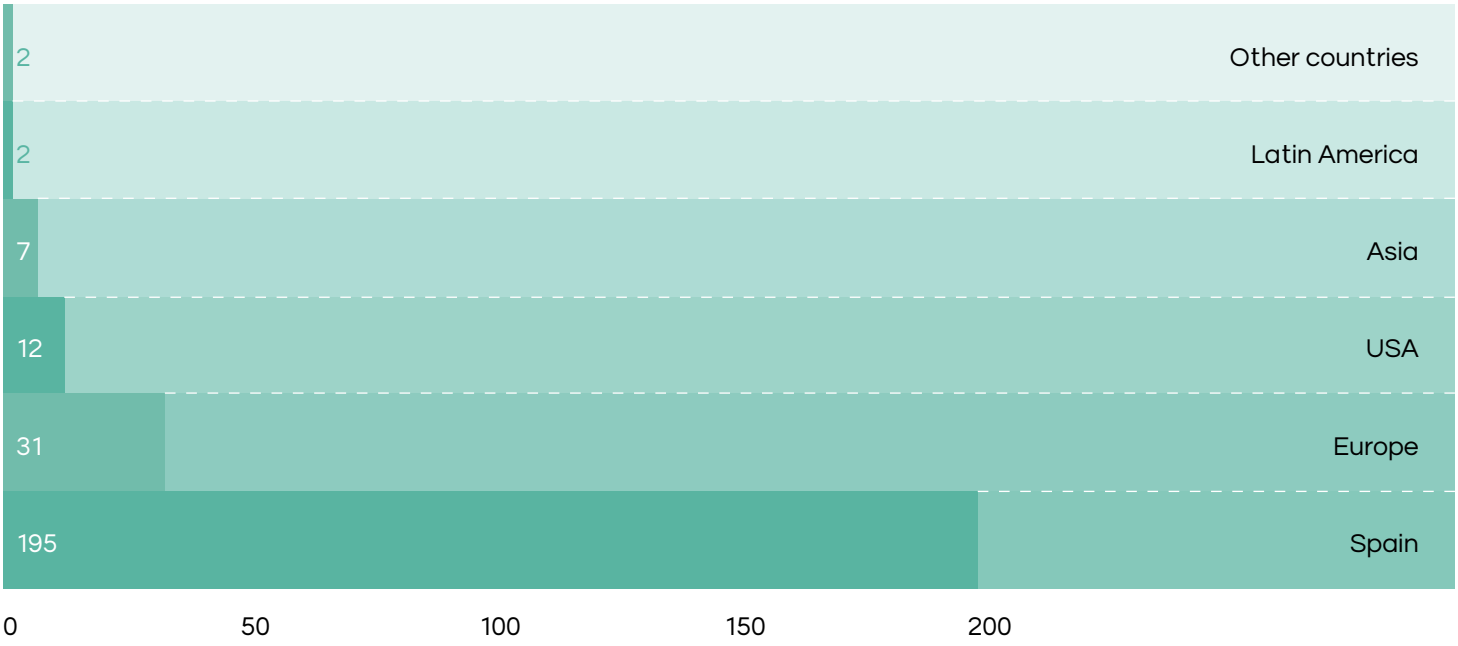
In 2025, 266 agreements or partnerships were recorded in the biotech sector.

Of these, 65%, or 168, were with other organisations, such as research centres, foundations or hospitals. Plus, 50 of them (graph 7.1) were with another biotech firm and 40 with a company that uses biotechnology.

In terms of country of origin of the entities they reached collaboration agreements with (graph 7.2), nearly 80% were partnerships with Spanish companies, 13% with European companies and 5% with US companies.

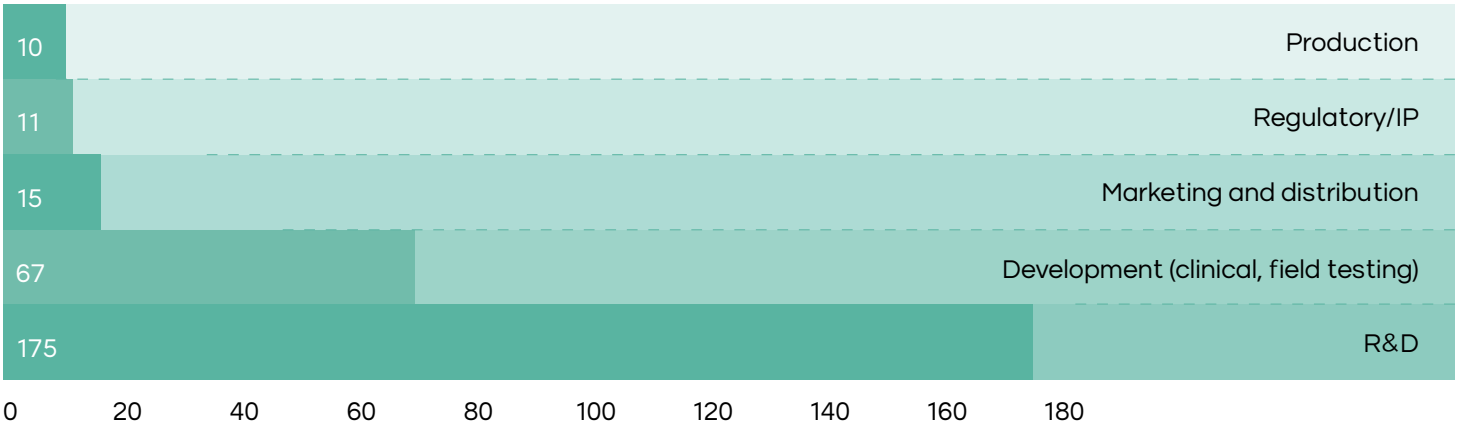


Graph 7.1. Breakdown of partnerships in the Spanish biotechnology sector in 2025 by partner profile. Source: AseBio.



Graph 7.2. Breakdown of partnerships in the Spanish biotechnology sector in 2025 by partner origin. Source: AseBio.

Regarding the purpose of the collaboration, 175 (64%) of the 266 partnerships focus on research and development, 67 (24%) are aimed at carrying out clinical development or field trials, 15 (5%) relate to distribution or marketing partnerships, and 4% are partnerships focused on regulatory matters or production. (Graph 7.3).



Graph 7.3. Breakdown of partnerships in the Spanish biotechnology sector in 2025 by purpose of the partnership. Source: AseBio.

Research agreements:

3PBIOVIAN and the University of Navarra, with Eversens and Nasertic, Clinica Universidad de Navarra, Hospital Universitario de Navarra, FIMA and Navarra Biomed research centres launched a scientific and technological project to improve efficacy, safety and accessibility of CAR-T cell therapies. Also, 3PBIOVIAN and Eleva, a manufacturer of biologics, announced a strategic partnership to collaborate on manufacturing 3PBIOVIAN's current pipeline programmes and potential future programmes based on Eleva's technology platform.

AINIA and the Spanish Biogas Association (AEBIG) signed a collaboration agreement to develop innovative solutions that contribute to sustainability and energy efficiency in key sectors such as the agrifood, chemical and environmental industries.

Algenex, Protein Alternatives, CSIC, with Biogénesis Bagó, Laboratorios Farmalan, CISA-INIA and CIC bioGUNE, launched the DIVAVACEHD project, with the aim of developing an effective vaccine for the epizootic haemorrhagic disease virus (EHDV) in cattle.

Almirall and Absci Corporation announced the expansion of their collaboration agreement on AI drug discovery, with the selection of a second Almirall target aimed at dermatological conditions.

Atrys, in collaboration with IDIPHISA, launched the BLinfoPred project to develop and validate predictive tools based on omics technology and liquid biopsy, enabling precise genetic classification of diffuse large B-cell lymphoma (DLBCL) and predicting therapeutic response. Plus, it signed an agreement with the Vithas hospital group to manage the pathological anatomy service at three of its centres in Catalonia.

BIOLAN and AITA MENNI signed a collaboration agreement to develop a neurorehabilitation system for post-stroke patients that will help personalise treatment.

Biofabri and IAVI launched the IMAGINE clinical trial aimed at assessing the safety and efficacy of the tuberculosis vaccine in adolescents and adults.

Corify Care, with the Hospital Clinic Barcelona research institute August Pi i Sunyer Biomedical Research Institute, ADAS3D Medical and Universitat Politècnica de València, launched the APOLO project to prevent and treat sudden cardiac death using high-precision cardiac mapping. Corify also entered into a partnership agreement with the Mayo Clinic to improve care for patients with cardiac arrhythmias using artificial intelligence.

Curapath forged a partnership with Cayman Chemical to distribute coating lipids based on polysarcosine (pSar) and the company's poly amino acids for use in the development of lipid nanoparticles (LNP).

Flomics Biotech, in collaboration with RenovaroCube, launched the LUMINA project to develop an innovative platform for non-invasive detection of minimal residual disease (MRD) in lung cancer patients using multi-omic biomarkers and artificial intelligence algorithms.

Grifols entered into a partnership with FcR Therapeutics to develop recombinant nanoantibodies to treat autoimmune diseases. It also signed an agreement with Inpeco to provide transfusion medicine labs with complete, tailored instrumentation, robotics and software capabilities, and with IBL International to develop advanced biomarker panels for a clinical diagnostic platform.

Hifas da Terra, with Geriavi (DomusVi), Balidea Consulting & Programming, Academia Trinidad, Niucom 180 and Inovalabs Digitalse, launched the AI-VIDDA project to develop advanced solutions to prevent cognitive decline in seniors using artificial intelligence and biotechnology.

Hipra launched the SPEEDCELL project, which aims to reduce development time for vaccines and biologics to 100 days in the event of a health crisis. To do this, they will optimise the development and manufacturing process based on cell lines used to produce vaccines and biological products.

Histocell, with Fundación Jiménez Díaz Health Research Institute, launched the InUrStop project to treat stress urinary incontinence in women over 50 through the SUITH multicentre, randomised clinical trial.

mAbxience launched a project with HP to develop an artificial intelligence solution to optimise the production process for monoclonal antibodies and biosimilars.

MACAMI and the Food Science Research Institute (CIAL, CSIC-UAM) signed an agreement to promote innovation and development of nutraceuticals using microalgae.

NeoSanix, part of the 4Mediks group, signed a partnership agreement with the Government of Catalonia to roll out a plant-based disinfectant that is already helping contain the spread of the virus that causes Lumpy Skin Disease.

Natac and IMDEA Nutrition signed a collaboration agreement to promote the development and scientific validation of new natural ingredients designed to improve health.

Nucaps, with Iberfruta, Isanatur, Ingredalia, Ojer Pharma, Espiga I+D, UNAV, CNTA and NAGRIFOOD, launched the NUTRACAPS project, which proposes innovative solutions based on nano-encapsulated bioactive compounds to treat metabolic syndrome and improve wound healing.

Nuage Therapeutics, with CNIO, the European Molecular Biology Laboratory in Barcelona and the Vall d'Hebron Institute of Oncology, launched a project to develop NTX-A, a pioneering drug targeting the ASCL1 protein, which plays a key role in the development of the most common type of small cell lung cancer.

Biohope signed a knowledge transfer agreement with the Mayo Clinic, a world leader in medical research and patient care, to advance development and commercialisation of Immunobiogram, the in vitro diagnostic (IVD) device developed by Biohope, which is patented in the United States and other territories.

Reveal Genomics and Ona Therapeutics entered into an agreement under which Reveal Genomics will lead the molecular analysis of tumour and blood samples from the Phase I/II trial of ONA-255 to identify biomarkers, define patient subgroups and support clinical development of the drug.

Solutex signed an agreement with BTC Europe for exclusive distribution of the line of Omega-3 supplements based on fish oil and algae oil, marketed under the Omegatex® brand, in EU27 countries.

SunRock Biopharma entered into a partnership with Escugen to jointly develop SRB123, an antibody-drug conjugate (ADC) targeting C-C motif chemokine receptor 9 (CCR9), a tumour-associated antigen that is over-expressed in numerous solid tumours, including pancreatic, ovarian and lung cancer. It also signed an agreement with Chime Biologics to develop a new anti-CCR9 monoclonal antibody for inflammatory bowel disease (IBD), and with the Vall d'Hebron Institute of Oncology to launch the OVERCAD project to develop a new therapeutic strategy for the treatment of resistant ovarian cancer.

Viralgen entered into a partnership with the Broad Institute of MIT (Massachusetts Institute of Technology) and Harvard University to develop and manufacture an innovative approach to gene therapy for prion diseases. Viralgen also signed an agreement with Axovia to manufacture an experimental gene therapy for retinal dystrophy in patients with Bardet-Biedl syndrome (BBS).

Viva In Vitro Diagnostics signed a collaboration agreement with Vall d'Hebron University Hospital and its research institute to carry out a clinical study focusing on functional detection of the NLRP3 inflammasome as a biomarker to improve prognosis, immunological stratification and active monitoring of patients with sepsis.

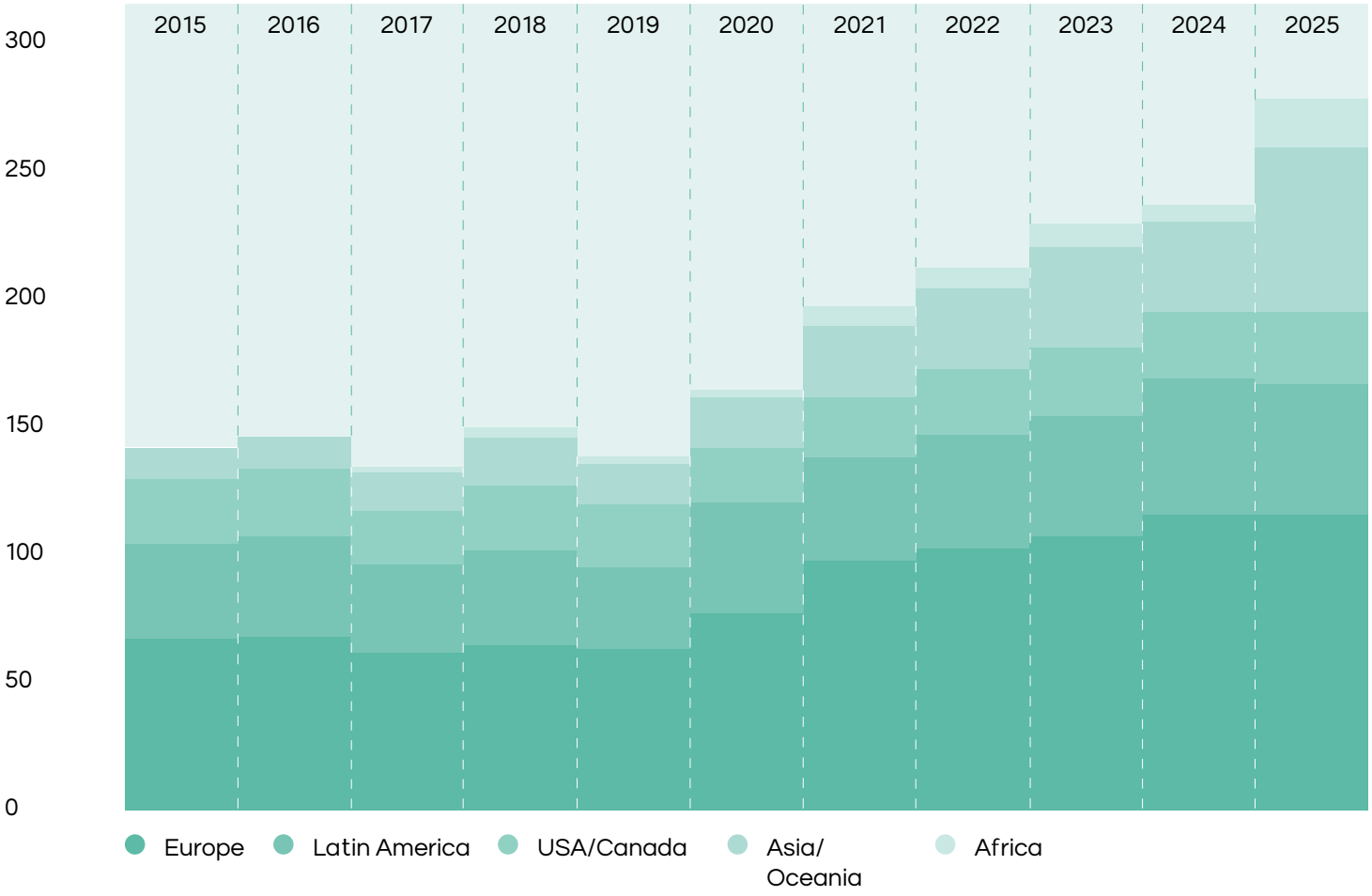
07.2. Attracting international companies.

AseBio member companies increased their international presence 19% in 2025.

44 member companies, the same as last year, have a direct presence in 94 countries on all continents, representing a significant step forward in their internationalisation.

Plus, the total number of member subsidiaries outside of Spain in 2025 was 280, 45 more than in 2024, consolidating their growth beyond the national market.

If we analyse where members decide to set up subsidiaries by geographic zone, the most popular region is Europe (42%), then Asia (23%). Latin America follows (18%), ahead of the United States and Canada (10%), with African countries in last place (6%).



Graph 7.4. Evolution of presence of AseBio member companies by geographic zones (2015-2025). Source: AseBio.

Looking at countries, the United States has the most Spanish subsidiaries (25), followed by Portugal with 17 and the United Kingdom with 12. Germany, France, Italy and Belgium are also home to many subsidiaries: 11, 10 and 9 respectively. Belgium follows with 8, and Mexico with 7 subsidiaries, while Chile, Colombia and Peru each have 6 branches of Spanish companies.

In terms of evolution, the United States strengthened its position, with one more subsidiary than in 2024, while Portugal is expanding its presence and slightly narrowing the gap with the US market.

Meanwhile, the United Kingdom saw noteworthy growth, with two new branches, while Germany and Brazil dropped down the rankings, losing one and two subsidiaries each, respectively. Furthermore, Canada and Ecuador each added a new subsidiary.

Table 7.1 shows where AseBio Spanish member companies have subsidiaries and the number of subsidiaries in each market, while Table 7.2 lists the countries in which member companies have a direct presence.

Country	Number of subsidiaries				
USA	25	Thailand	3	Honduras	1
Portugal	17	Uruguay	3	Hong Kong	1
United Kingdom	12	Bolivia	2	Hungary	1
Germany	11	United Arab Emirates	2	Iraq	1
France	10	Slovakia	2	Iceland	1
Italy	9	Finland	2	Israel	1
Belgium	8	Japan	2	Jordan	1
Mexico	7	Malaysia	2	Kuwait	1
Chile	6	Pakistan	2	Laos	1
Colombia	6	Panama	2	Lebanon	1
Denmark	6	Paraguay	2	Luxembourg	1
Peru	6	Dominican Republic	2	Monaco	1
Czech Republic	6	Taiwan	2	Mozambique	1
Brazil	5	Turkey	2	Nicaragua	1
China	5	Venezuela	2	New Zealand	1
Poland	5	Vietnam	2	Oman	1
Argentina	4	Andorra	1	Slovak Republic	1
Canada	4	Angola	1	Russia	1
Ecuador	4	Saudi Arabia	1	San Marino	1
Netherlands	4	Aruba	1	São Tomé and Prín-cipe	1
Singapore	4	Bangladesh	1	Serbia	1
Switzerland	4	Bahrain	1	Sri Lanka	1
Australia	3	Brunei	1	South Africa	1
Austria	3	Cape Verde	1	Suriname	1
South Korea	3	Cambodia	1	Trinidad and Tobago	1
Philippines	3	Qatar	1	Ukraine	1
Greece	3	Costa Rica	1	Vatican	1
India	3	Curaçao	1	Yemen	1
Indonesia	3	Egypt	1		
Ireland	3	El Salvador	1		
Morocco	3	Gibraltar	1		
Norway	3	Guatemala	1		
Sweden	3	Guinea-Bissau	1		

Table 7.1. Breakdown of subsidiaries of AseBio member companies. Source: AseBio.

Company	Countries
3P Biopharmaceuticals	USA, Finland
Aglaris Cell	United Kingdom
Ackermann International	Germany, Australia, Belgium, Brazil, Canada, Chile, Colombia, Denmark, Ecuador, United Arab Emirates, USA, France, Greece, Hungary, Israel, Italy, Mexico, Netherlands, Panama, Peru, Poland, Portugal, Czech Republic, Singapore, Switzerland, Turkey
Agarose Beads Technologies	USA
AINIA	Portugal
Almirall	Germany, Austria, Denmark, USA, Slovakia, France, Italy, Netherlands, Poland, United Kingdom, Czech Republic, Switzerland, Portugal, Belgium
AMS Lab	Italy, Morocco, Portugal
Antares Consulting	Belgium, Bolivia, France, Portugal
Arosa I+D	Argentina, Germany, Brazil, Chile, China, Colombia, Ecuador, USA, Mexico, Paraguay, Peru, Portugal, Dominican Republic, Uruguay, Venezuela
Asphalion	Germany, United Kingdom
Atrys Health	Brazil, Chile, Colombia, Peru, Portugal, Mexico
Biobide	USA
Biolan	Chile, Ecuador, USA, Philippines, Indonesia, Morocco, Mexico, Thailand
Biomol	Portugal
Bionet	Germany, USA
BTI Biotechnology Institute	Germany, USA, France, Italy, Mexico, Portugal, United Kingdom
Cocoon BioSciences	USA
Curapath	USA
Elzaburu	China
Euronext	Belgium, Denmark, USA, France, Greece, Ireland, Italy, Norway, Portugal, United Kingdom, Singapore
Fundación Tecnalia Research and Innovation	China, Colombia, France, Italy, Serbia
Grifols	Germany, Andorra, Angola, Saudi Arabia, Argentina, Aruba, Australia, Austria, Bangladesh, Bahrain, Bolivia, Brazil, Brunei, Cape Verde, Cambodia, Canada, Qatar, Chile, China, Colombia, South Korea, Costa Rica, Curaçao, Denmark, United Arab Emirates, Ecuador, Egypt, El Salvador, USA, Philippines, Finland, France, Gibraltar, Guatemala, Guinea-Bissau, Honduras, Hong Kong, India, Indonesia, Iraq, Ireland, Iceland, Italy, Japan, Jordan, Kuwait, Laos, Lebanon, Malaysia, Mexico, Mozambique, Nicaragua, Norway, New Zealand, Oman, Pakistan, Panama, Paraguay, Peru, Poland, Portugal, United Kingdom, Czech Republic, Dominican Republic, Slovakia, San Marino, São Tomé and Príncipe, Singapore, Sri Lanka, Sweden, Switzerland, Surinam, Thailand, Taiwan, Trinidad and Tobago, Uruguay, Vatican City, Venezuela, Vietnam, Yemen
HelixBios	Peru
Hipra	Germany, Argentina, Austria, Belgium, Brazil, Canada, China, Colombia, South Korea, Denmark, Slovakia, USA, Philippines, France, Greece, India, Indonesia, Ireland, Italy, Japan, Luxembourg, Malaysia, Morocco, Mexico, Norway, Netherlands, Pakistan, Peru, Poland, Portugal, United Kingdom, Czech Republic, Russia, South Africa, Sweden, Thailand, Taiwan, Turkey, Ukraine, Uruguay, Vietnam
Hoffmann Eitle	Germany, Italy, Netherlands, United Kingdom
Klinea Ingeniería Farmaceútica	Denmark
Laboratorios Leti	Germany, Portugal
Laminar Pharma	USA
LiberaBio	USA

mAbxience	Argentina, Switzerland
SavanaMed	Germany, USA, United Kingdom, France
Minoryx Therapeutics	Belgium
Natac Biotech	USA, Singapore
Nostrum Biodiscovery	USA
Oryzon	USA
Protein Alternatives	USA
PVPHARM	Portugal, Czech Republic
Qualitec Farma	USA, United Kingdom, Portugal
Quibim	USA, United Kingdom
Reig Jofre	Belgium, Monaco, Poland, Portugal, United Kingdom, Czech Republic, Sweden
Sermes CRO	Chile
Solutex	South Korea, USA, India
Telum Therapeutics	USA
Winning Consulting	Australia, Belgium, Canada, France, Portugal

Table 7.2. AseBio members and countries where they have a direct presence. Source: AseBio.

Branded content

Jorge Arenas Vidal,
Partner, BioSerentia Group

BioSerentia ventures

Towards an Extreme Health Nation: biotechnology for healthy longevity as a driver of economic and healthcare transformation

Europe is facing one of the greatest structural challenges in its recent history: a rapidly ageing population, a sustained decline in the birth rate and rising cases of chronic conditions and dependency, all factors that are putting pressure on the sustainability of healthcare and social protection systems. The prevailing healthcare model remains essentially reactive, focusing on diagnosing and treating illnesses once they have developed and on mitigating their clinical, social and economic consequences through limited reforms to healthcare, labour markets or taxation. However, it is urgent that we move towards a proactive model of healthcare management that is more preventative and predictive.

In this context, and as a first step, we propose progressive implementation of **'Extreme Health'** projects. This complementary approach to the current healthcare model aims to maintain optimal biological and functional health for as long as possible, reducing the number of years spent in ill health and dependency, a concept known as compression of morbidity. Its conceptual basis is in line with the central hypothesis of geroscience: accurately identifying the molecular mechanisms of ageing would make it possible to develop strategies capable of slowing or modulating them and, in doing so, prevent or delay the onset of age-related diseases.

Implementing a model based on this approach requires a strategic mobilisation and allocation of resources that can only be undertaken by national or regional governments. Given this, we propose building an **'Extreme Health Nation' (EHN)**, that is, a nation or region which, by implementing Extreme Health programmes, makes healthy longevity a strategic national priority and a driving force for economic, scientific and industrial competitiveness. An EHN designs specific public policies to accelerate development of a new economy based on healthy longevity. It uses the cross-cutting nature of biotechnology to develop new products and innovative services that improve health outcomes and more efficiently manage healthcare resources, with the resulting positive financial impact on the healthcare system and the national accounts.
Of course this won't be easy. As well as having to bridge the cultural and operational divide between clinicians and healthcare managers, taking this approach will initially require allocation of significant budgetary resources to research and the roll-out of technology.

A highly complex issue when resources are perpetually limited. However, under a public-private partnership model, it is precisely this transition effort that will give rise to a **new generation of biotech and techbio industries** specialising in healthy longevity. A new wave of technological solutions that integrate omics and digital tools to achieve the goal of healthy longevity promises to generate exponential value with far-reaching strategic and economic implications: new, conclusive biomarkers of biological age; new, precise, cost-effective omics-based diagnostics; platforms for longitudinal and continuous analysis; new personalised interventions guided by genotype, phenotype and AI; digital tools for channelling digital health marketplaces; computational biology in clinical practice; use of synthetic data; personalised nutraceuticals and more, represent just a few examples of the enormous industrial potential associated with this transformation.

The Biotech Act consolidates biotechnology as a strategic asset for simultaneously fostering technological sovereignty, industrial competitiveness and economic growth, which is a strategic focus for **ASEBIO**. The 'Extreme Health Nation' approach further reinforces this logic by providing a transformative purpose: using biotechnology to maintain optimal biological health, delay age-related diseases and build more sustainable, precise, efficient healthcare systems. And in a synergistic and reciprocal manner, the Biotech Act will provide the improvements to the regulatory, financial and industrial frameworks needed to accelerate the implementation of EHNs, effectively cashing in on what is known as the **'longevity dividend'**: better health, increased productivity, reduced dependency and greater long-term economic and social well-being for everyone.

Impact

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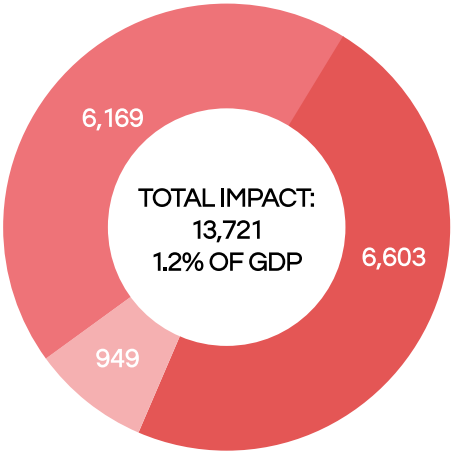
08. Impact

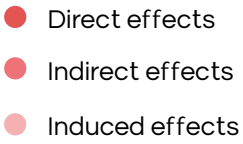
08.1. Economic impact

Biotech firms contribute 1.2% to the GDP.

The contribution of biotech firms to income generation in our country continued to rise in 2024 and now stands at over 1.2% of total GDP, or €13.721 billion.

As graph 8.1 shows, the breakdown of direct and indirect effects is proportionate.



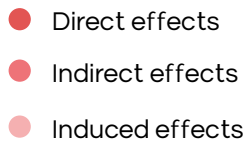


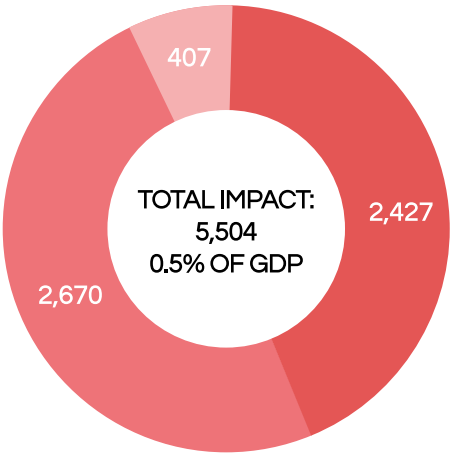
Graph 8.1. Impact of biotech companies on the GDP (€ millions of 2024 GDP). Source: Compiled internally from the information on companies collected by AseBio.

Contribution to the welfare state.

Biotech firms contribute 0.5% of the GDP in state taxes.

For 2024, the impact of the tax revenue from biotech companies was more than €5.5 billion, or roughly 0.5% of the GDP. The main sources of public income were social security contributions (38%) and VAT (28%).





Graph 8.2. Impact of total tax revenue from biotech companies (€ millions of 2024 tax revenue). Source: Compiled internally from the information on companies collected by AseBio.

Total production of biotech firms.

The joint turnover for biotech companies was 1% of the GDP in 2024.

In 2024, net growth in production at biotech firms rose more than 5%, or over €15.5 billion. That said, it still falls short of the exceptional turnover figures achieved thanks to commercialisation of Covid-19 vaccines in 2021 and 2022. Subtracting the nearly €9 billion biotech firms had to spend to generate their production, the income generated (GDP) was more than €6.6 billion, of which 44% went towards wages, with the remainder going towards surpluses and taxes.

As for the number of people employed in these activities, it continued to grow significantly in 2024, and now stands at over 40,100; this figure is now comparable to the total number of workers employed in the production and distribution of electricity and gas.

		2024	2023	2022	2021	2020	2019	2018	2017	2016
Production	€ millions	15,593	14,813	19,676	17,993	12,089	11,914	9,861	9,315	8,787
	% gwth	5.3%	-24.7% -2% (*)	9.4% 12.1% (*)	48.8% 7.8% (*)	1.5%	20.8%	5.9%	6.0%	0.1%
	% GDP	1.0%	1.0%	1.4%	1.5%	1.1%	1.0%	0.8%	0.8%	0.8%
Intermediate goods	€ Millions	8,990	8,871	12,898	11,562	8,301	8,174	7,230	6,433	6,592
Gross value added		6,603	5,942	6,778	6,431	3,788	3,740	2,631	2,882	2,195
Employee salaries		2,915	2,629	2,467	2,198	1,987	1,878	1,759	1,515	1,330
Sur. Gross margin profit and Net taxes		3,688	3,313	4,312	4,233	1,801	1,862	872	1,368	866
Employment	Number of people	40,114	38,287	36,273	34,388	31,287	29,512	27,085	25,029	22,637
	% gwth	4.8%	5.6%	5.5%	9.9%	6.0%	9.0%	8.2%	10.6%	5.3%
	% Total	0.19%	0.18%	0.18%	0.17%	0.16%	0.15%	0.14%	0.13%	0.12%

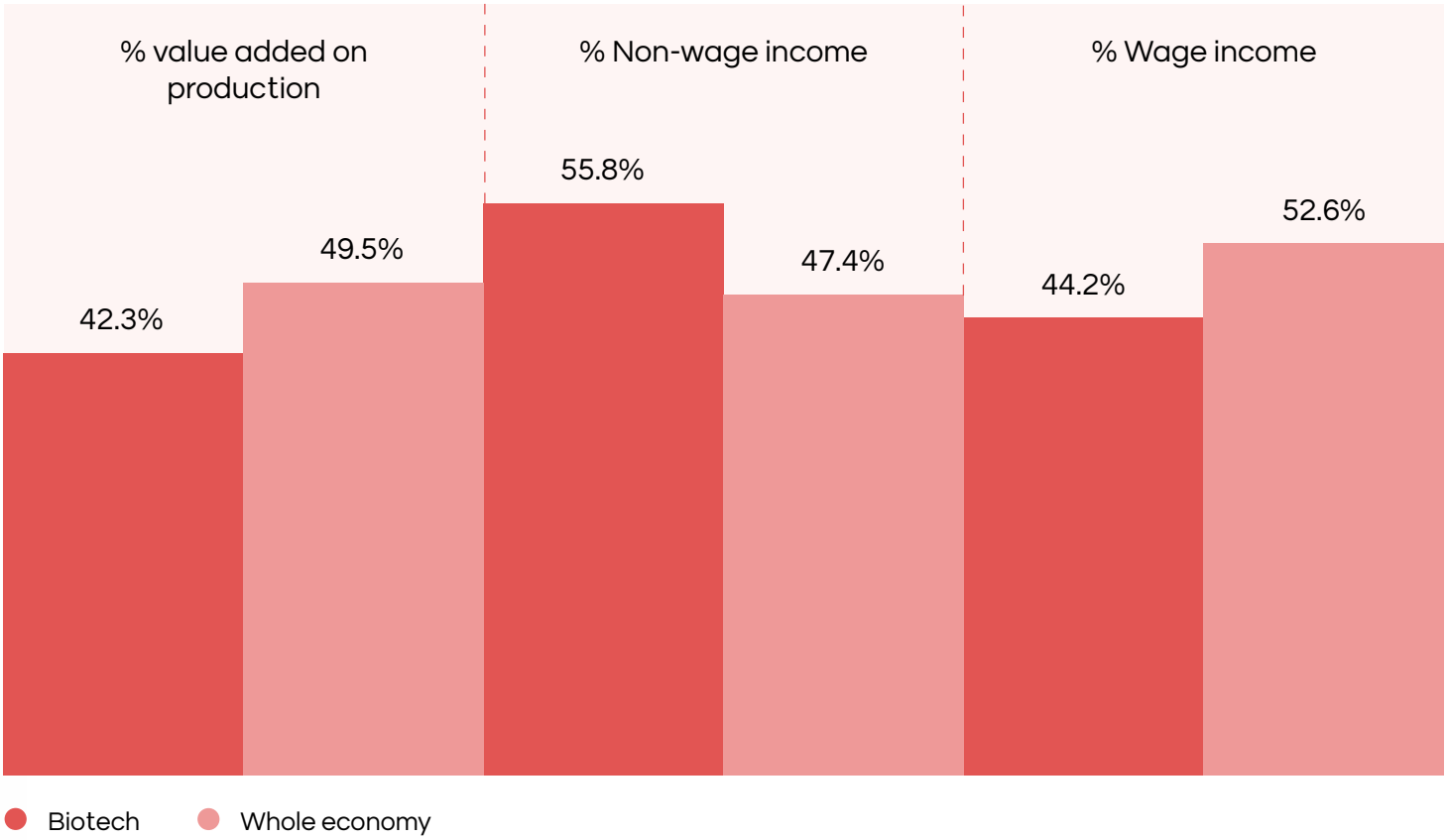
Table 8.1. Estimated economic activity of biotech firms. Source: Compiled internally from the information on companies collected by AseBio. (*) Excluding Moderna turnover. For 2024, no distinction is made as this is not expected to have a significant impact on total production.

Productivity and salaries.

Productivity per employee at biotech firms is more than double the national average and salary per employee is more than double the national average.

As graph 3.3 shows in Chapter 3, productivity levels and average salary remain well above the national average, with productivity being 2.6 times higher and salaries nearly double.

Graph 8.3 illustrates how productivity is structured at biotech firms. The greater need for production inputs means biotech firms generate somewhat less per unit produced than the economy as a whole. On the other hand, these ratios are considerably higher than those for industrial activities as a whole (28%). Similarly, the breakdown of income generated is more heavily skewed towards non-wage income than the national average, as is to be expected in sectors with higher capital requirements.



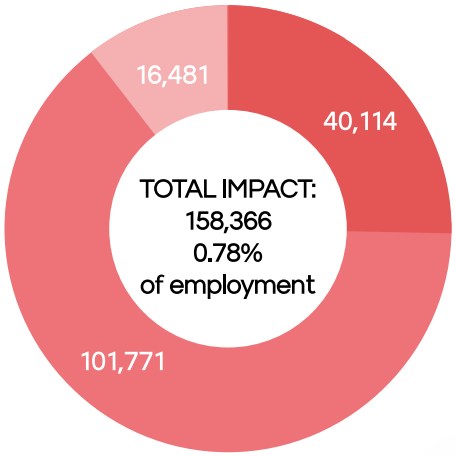
Graph 8.3. Basic productivity ratios for biotech firms and the whole economy. Source: Compiled internally from the information on companies collected by AseBio. 2024.

08.2. Impact on employment.

Spanish biotech companies contribute 158,366 jobs, 0.78% of total employment nationwide.

Applying the input-output methodology to quantify value chains across the economic system allows us to quantify the total number of jobs that depend, directly or indirectly, on the activity generated by biotech firms.

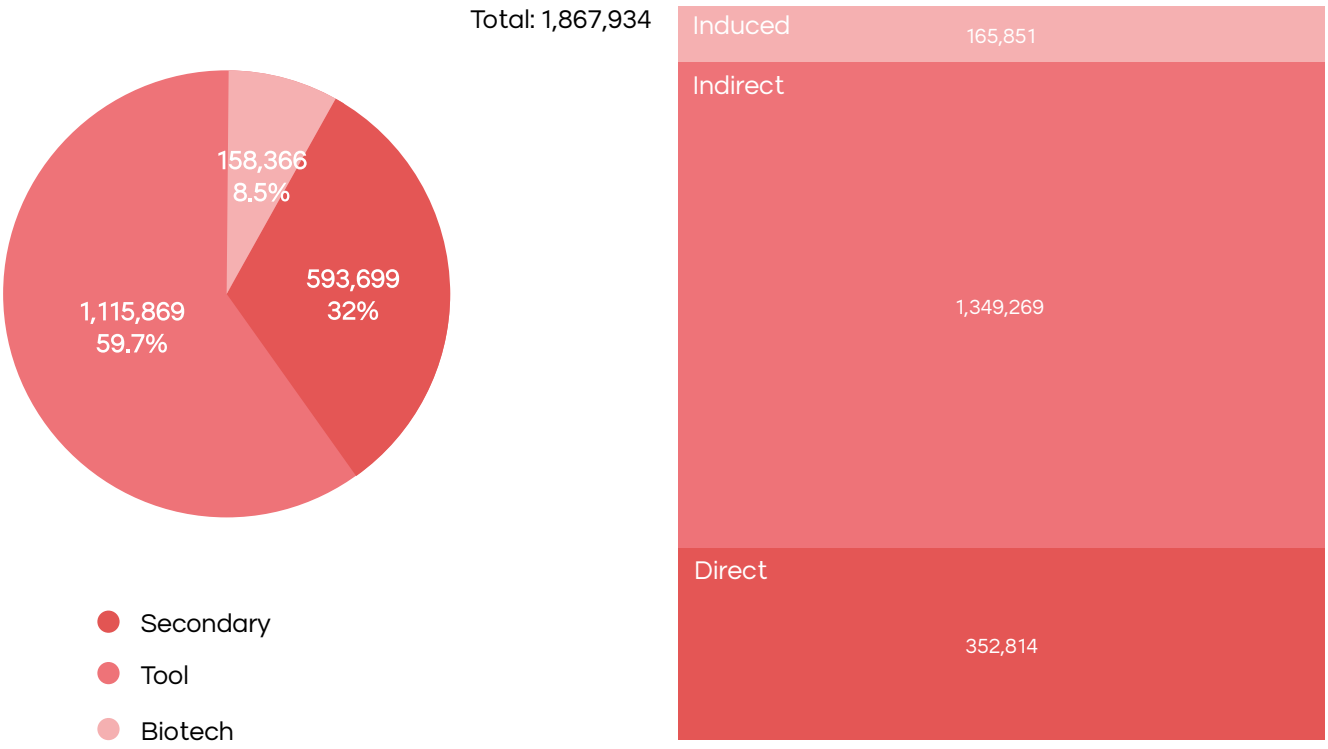
Therefore, in 2024, this figure exceeded 158,000 workers, 0.78% of the national total, as each direct job would generate just under 3 indirect and induced jobs (graph 8.4).



Graph 8.4. Impact on total employment of biotech firms (total jobs in 2024). Source: Compiled internally from the information on companies collected by AseBio and the INE Survey on Biotechnology Use.

Using the results of the INE Survey on Biotechnology Use for companies with biotechnology as a secondary activity and those that use biotechnology as a production tool, and the results of a direct survey of biotech firms conducted by AseBio, we can determine the overall impact of these biotechnology activities on the Spanish labour market as a whole. In 2024, more than 1,800,000 workers depended, either directly or indirectly, on the activities carried out by biotech firms. Of these workers, 19% were employed directly, 72% were employed by companies that supply goods and services to the value chain generated by these companies.

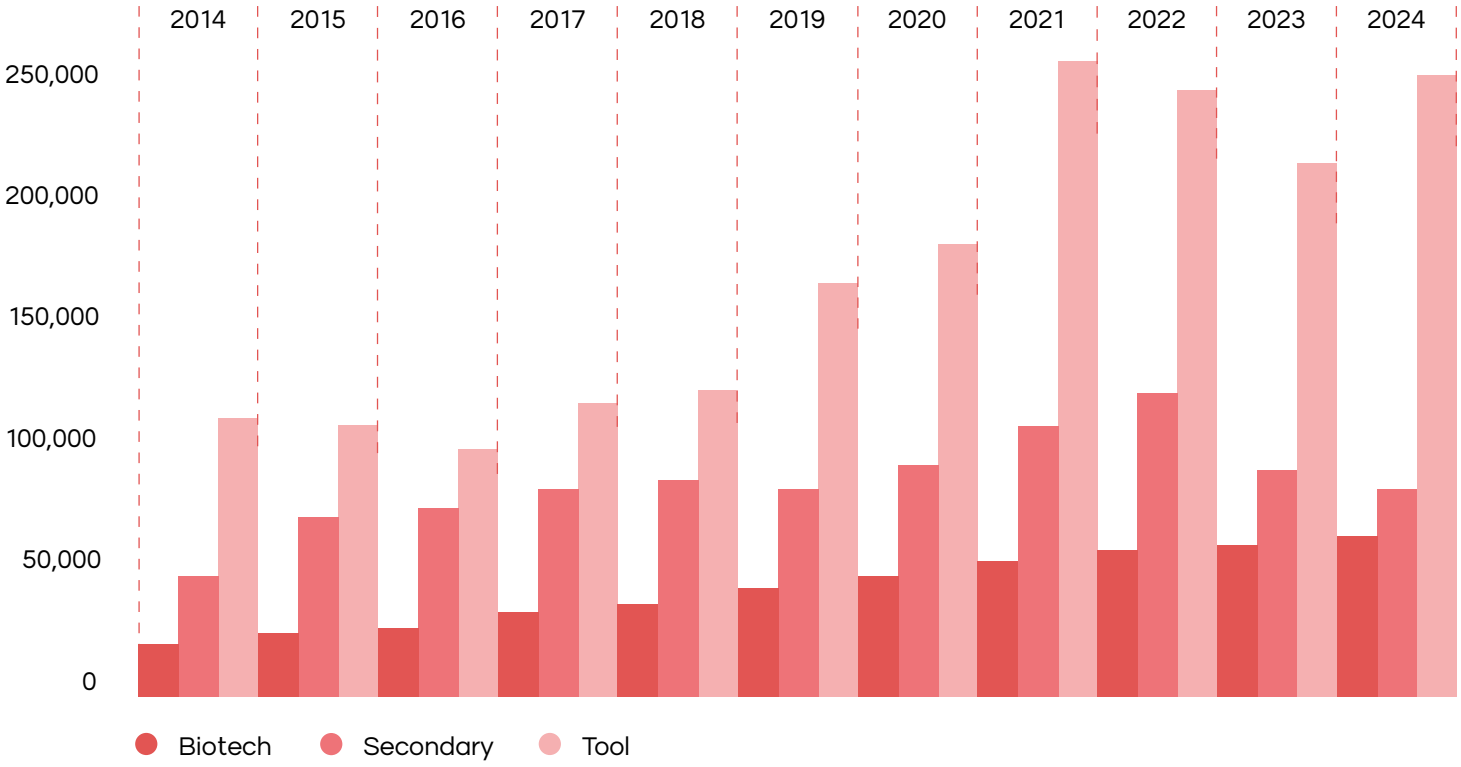
By type of company, biotech firms account for 8% of this impact, while those with biotechnology as a secondary activity contribute 32% and those that use biotechnology as a production tool, the remaining 60% (graph 8.5).



Graph 8.5. Total contribution to employment by companies with biotechnology activity (total jobs in 2024). Source: Compiled internally from the information on companies collected by AseBio and the INE Survey on Biotechnology Use.

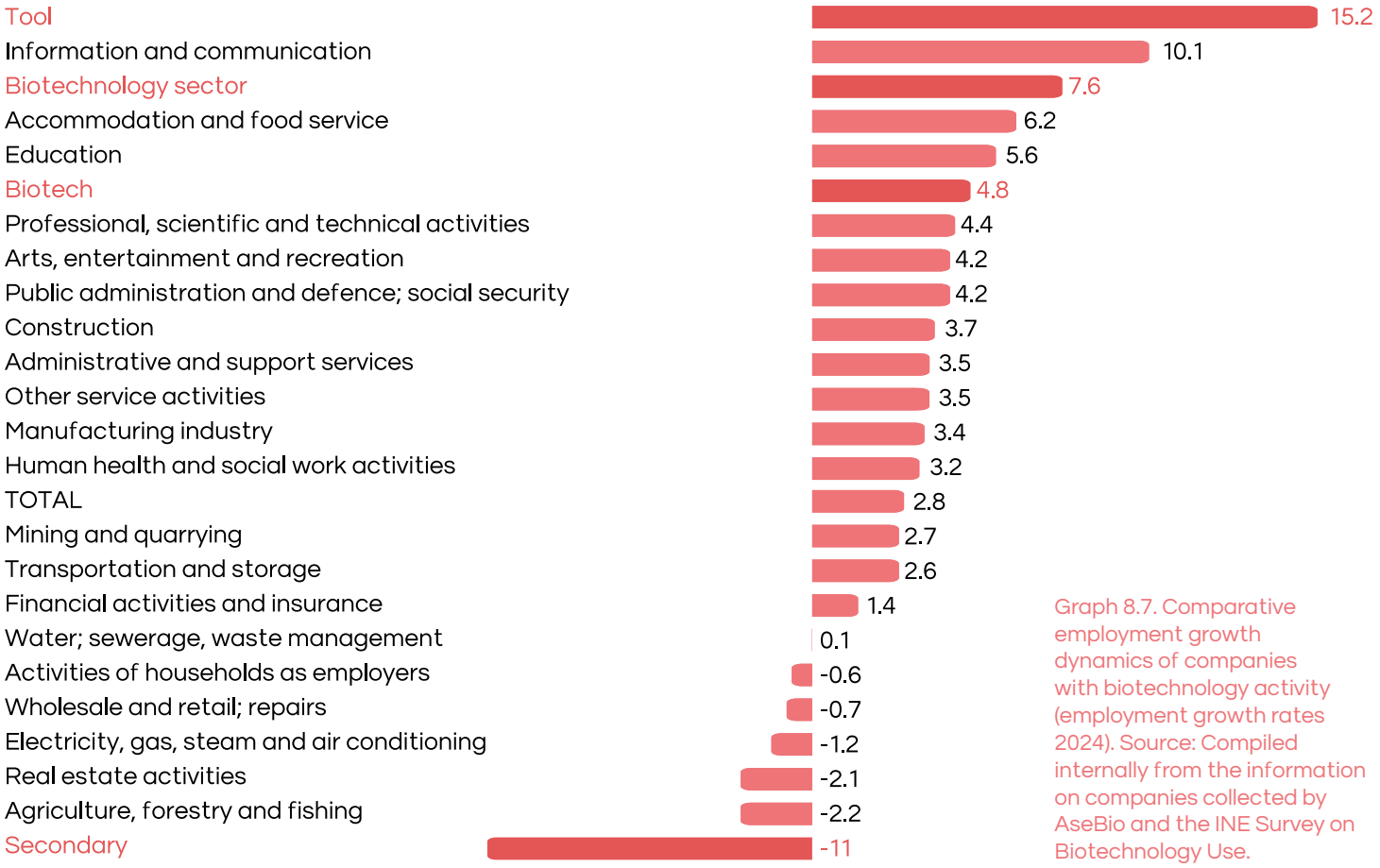
The lack of consistency in the data collected in the INE Survey on Biotechnology Use, which depends on the response rate from companies in the various waves, has led to a certain volatility in employment figures tied to biotechnology activities, particularly among companies that use biotechnology as a production tool and companies with biotechnology as a secondary activity.

Bearing this in mind, in 2024 employment dropped 11% at companies with biotechnology as a secondary activity and increased 15% at ones that use it as a tool. For biotech firms, growth remained steady at roughly 5%. In any case, employment in the biotechnology sector has doubled over the past 10 years, rising from just over 1% of the national total to more than 1.7%.



Graph 8.6. Evolution of employment in biotechnology companies. Source: Compiled internally from the information on companies collected by AseBio and the INE Survey on Biotechnology Use.

Despite the apparent stagnation in employment at companies with biotechnology as a secondary activity, the sharp increase recorded for companies that use biotechnology as a production tool, leading the sector ranking, puts biotechnology employment as a whole at the top of the ranking in terms of growth in 2024, surpassed only by activities linked to information and communications (graph 8.7).



Graph 8.7. Comparative employment growth dynamics of companies with biotechnology activity (employment growth rates 2024). Source: Compiled internally from the information on companies collected by AseBio and the INE Survey on Biotechnology Use.

Branded content

Josep Lluís Falcó, Founder and CEO
Natalia de la Figuera, Managing Partner and COO

GENESIS Biomed

Opinion piece by GENESIS Biomed on: The Biotech Act and major challenges

Biotech Act I is the informal name given to the first major European legislative initiative in biotechnology, which focuses on health and aims to create a regulatory and industrial environment that facilitates the transition from laboratory to market. To do so, it aims to improve access to finance, promote industrial scale-up, strengthen infrastructure, streamline procedures and accelerate development and authorisation of innovative products.

The Covid-19 pandemic revealed structural weaknesses in Europe. Despite the solid scientific foundation, there were limitations on scaling up vaccine production and a high degree of dependence on global supply chains. This highlighted the need to strengthen manufacturing capabilities and reduce strategic dependencies. In this context, the Biotech Act is an opportunity to strengthen European autonomy in a key sector. For this reason, the proposal addresses structural hurdles such as long development times, limited effective protection of industrial property rights, difficulties in securing funding, a lack of GMP facilities and complex regulatory frameworks that are particularly ill-suited to biotechnology and advanced therapy medicinal products (ATMPs), which are not manufactured according to traditional models.

Based on our experience at GENESIS Biomed, where we frequently support spin-offs and start-ups in developing this type of product, we know that the challenge is considerable. From the perspective of these businesses, one of the main challenges is funding. In Spain, the amount of venture capital available for biotechnology remains limited and, furthermore, the volume of investment is often insufficient for projects requiring large funding rounds. On top of this, public funding —even through key instruments such as those provided by the CDTI that help leverage private investment from venture capital— remains insufficient to meet the sector's actual needs.

Another major challenge is the regulatory framework, particularly in the case of ATMPs, where the situation is even more complex, especially when they originate in hospital settings. In these cases, an unresolved challenge remains: how to efficiently manage the transition from a development process originating in a hospital setting towards the creation of a spin-off or start-up that can take that ATMP through to initial regulatory approval —for example, within the framework of the Hospital Exemption— and then move towards a more robust, standardised manufacturing model that would allow it to be rolled out to other hospitals, both in Spain and in Europe. This is a particularly challenging process from a scientific, regulatory, industrial and financial perspective.

Europe has a responsibility to tackle these and other challenges clearly identified in the Biotech Act. The continent has talent, scientific knowledge and the capacity for innovation, but it continues to operate in a fragmented, excessively bureaucratic system with insufficient investment. Overcoming these limitations will require a shared vision, greater coordination and a genuine willingness to act in a European spirit. Only by joining forces, sharing capabilities and prioritising the general interest over the individual interests of each region or Member State will Europe be able to build a competitive, resilient biotechnology ecosystem capable of meeting its strategic needs.

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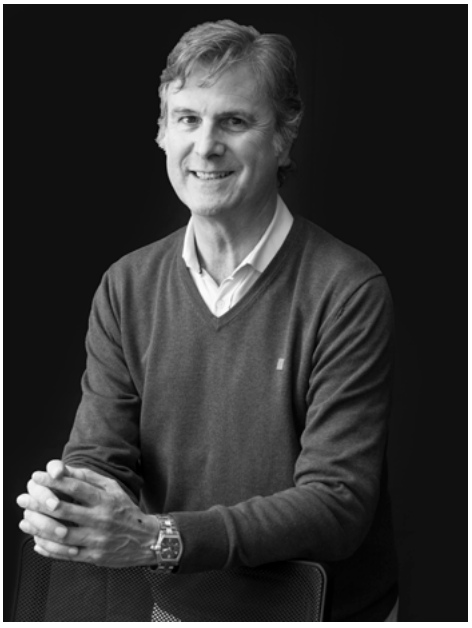

Committees

Goals

1. To influence regulatory processes that affect the application of biotechnology in healthcare.
2. To help develop and improve the national health system, promoting access to biotechnology innovation that is compatible with sustainability.
3. To raise awareness of the contributions biotechnology makes to health and further its recognition as a sector that generates value added.
4. To lead collaboration and partnership initiatives with stakeholders in the public and private sectors that foster innovation in healthcare and new technology and public policies that valorise R&D throughout the chain.

Workgroups

- **Market access.** Coordinator: Natividad Calvente (Novartis)
- **Personalised medicine and advanced diagnostics.** Coordinator: Elena Sánchez (Amadix)
- **Drug discovery.** Coordinator: Javier Terriente (ZeClinics/ ZeCardio)
- **Advanced therapies.** Coordinator: Gurutz Linazasoro (ViveBiotech)
- **One Health: AMR and emerging infectious diseases.** Coordinators: Bárbara Astilleros and Dori Campo (MSD)

Committees

Sustainability committee

Led by Jordi Arnalte
(Bayer Hispania)

Goals

1. To promote an appropriate, stable regulatory framework in Spain and Europe that can facilitate the contributions of biotechnology to agrifood production and environmental conservation, and to encourage research and innovation in industrial biotechnology.

2. To continue putting fields of biotechnology, including agrifood, blue biotechnology, industrial biotechnology, on the agenda of public institutions and administrations, encouraging measures to promote and support the sector.

3. To boost visibility and recognition of biotechnology for its contribution to the circular economy and the role it plays in ensuring safe, sustainable, quality nutrition.

Workgroups

- **Sustainable agriculture.** Coordinator: Jordi Arnalte (Bayer Hispania)
- **Food innovation**. Coordinator: Bosco Emparanza (MOA Food Tech)
- **Industrial biotechnology**. Coordinator: Jörg Lindemann (Wacker)

Committees

Boost the ecosystem committee

Led by Carles Domenech (Ability Pharma)

Goals

1. To carry out actions to improve funding for R&D.
2. To make the most of artificial intelligence and new technologies in biotechnology.
3. To reinforce the positioning of specialised private capital as a key tool for driving the biotechnology sector.
4. To work to keep biotechnology in the news.
5. To promote the internationalisation of the biotechnology sector.
6. To promote strategies to make it easier for our members to attract and manage talent.

Workgroups

- **R&D incentives.** Coordinator: Sara Secall (Inveready)
- **Artificial intelligence and new technologies.** Coordinator: Jorge Tello (Savana Medical)
- **Private capital.** Coordinator: Clara Campàs (Asabys Partners)
- **Communication.** Coordinator: Juan Carlos Milena (Viva in Vitro)
- **Internationalisation.** Coordinator: Carles Domenech (Ability Pharma)
- **Talent and diversity.** Coordinator: Tomás Alarcón (3PBIOVIAN)

Business members

3PBIOVIAN

4MEDIKS

53BIOLOGICS

ABBVIE

ADNTRO

ADVANTHERA

AFARVI

AFFIRMA BIOTECH

ALCALIBER

ALGENEX

ALIATH BIOVENTURES

ALLBIOTECH

AMGEN

AMS BIOPHARMA

AMS LAB

ANQUOR
CORPORATE FINANCE

ARACLON BIOTECH

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ASPARIA GLYCOMICS

ASPHALION

ASTRAZENECA

ATLAS MOLECULAR
PHARMA

BCN HEALTH

BDI BIOTECH

BEPHARMA INSTITUTE

BEXEN MEDICAL

BIOHERENT

BIOHOPE SCIENTIFIC
SOLUTIONS FOR HUMAN
HEALTH

BIOINGENIUM

BIOINTAXIS

ABILITY PHARMA

ACKERMANN INTERNATIONAL

ADM

ADMIT THERAPEUTICS

AGAROSE BEAD TECHNOLOGIES

AGLARIS CELL

AGRENVEC

AIRWAY SHIELD

ALLINKY BIOPHARMA

ALMIRALL

ALTUM SEQUENCING

AMADIX

ANTARES CONSULTING

APPLIANT

APTATARGETS

APTUS BIOTECH

ARTHEX BIOTECH

ARTINVET INNOVATIVE THERAPIES

ASABYS PARTNERS

ASCIL BIOPHARM

ATRYS HEALTH

AYMING

BATEA ONCOLOGY

BAYER HISPANIA

BIOBIDE

BIOCEANICS

BIOCLONAL

BIODURO

BIOLAN

BIOM BIOMIXING AR

BIOMOL

BIONET INGENIERÍA

Business members

BIONIDO

BIOPREDX PREDICCIONES BIOLOGICALS

BIOSERENTIA

BIOTECHNOLOGY ASSETS

BTI BIOTECHNOLOGY INSTITUTE

CAPITAL CELL

CELLAB

CELTARYS RESEARCH

CMG MEDDEV

COBIOMIC BIOSCIENCE

COCOON BIOSCIENCE

CONDALAB

CRB INVERBIO

CRITERIA BIO VENTURES

CONUS AIRWAYS

CULTIPLY

DANAE UROGENOMICS

DARWIN BIOPROSPECTING EXCELLENCE

DIVERSA TECHNOLOGIES

DISRUPT THERAPEUTICS

ELZABURU

ENZYMLOGIC

EURONEXT

EUROPEAN RESEARCH BIOLOGICAL CENTER (ERBC)

GENESIS BIOMED

GENOMCORE

GILEAD SCIENCES

GOLD STANDARD DIAGNOSTICS

GSK (GLAXOSMITHKLINE)

HELIX BIOINFORMATICS SOLUTIONS

HIGHLIGHT THERAPEUTICS

HIFAS INNOVATION HUB

BIOTOOLS

BIOXYTOL

BME

BRAND SOLUCIONES AVANZADAS DE MARKETING

CENCORA

CERTEST BIOTEC

CESIF

CIMAB

CONNECTA THERAPEUTICS

COOL CHAIN LOGISTICS

COLFEED4PRINT

CORIFY CARE

CURAPATH

CTI (CTI LABORATORY SERVICES SPAIN)

CYTES BIOTECHNOLOGIES

DANAGEN BIOTED

MEDBIOINFORMATICS SOLUTIONS

DR. HEALTHCARE

DUPONTE INVESTIGACIÓN Y DESARROLLO SL

ELE BIOTECH

FATE

FLOMICS BIOTECH

GATE2BRAIN

GEA FOOD SOLUTIONS

GOODGUT

GRIFOLS

GRIFOLS ENGINEERING

GRUPO NATAC

HIPRA

HISTOCELL

HOFFMANN EITLE

Business members

IBERANIA

IDEEEA THERAPEUTICS

ILLUMINA

INBISTRA

INNOPROT

INNOQUA TOXICOLOGY CONSULTANTS

INNOUP FARMA

INTEGRA THERAPEUTICS

KIRSCH PHARMA

KLINEA INGENIERÍA FARMACÉUTICA

KONEXIO BIOTECH

LABGENETICS

LEANBIO

LEUKOS BIOTECH

LEV2050

LIBERA BIO

LONZA

MAIEUTICS RESEARCH SOLUTIONS

MABXIENCE

MACAMI BIOTECH

MEDTECH BARCELONA

MEINSA

MEISYS

MELIUS

MIKROBIOMIK

MILTENYI BIOTEC

MIMARK DIAGNOSTICS

MIMO BIOSCIENCES

MOLDRUG AI SYSTEMS

MSD

MULTIPLEX MOLECULAR DIAGNOSTICS (MULDIA)

NAMSA

INFOEFICIENCIA

INGREDALIA

INGULADOS RESEARCH

INHIBITEC ANTICUERPOS

INVEREADY

INVIVO CAPITAL PARTNERS

IOMED MEDICAL SOLUTIONS

KADANS SCIENCE PARTNER

LBBAL ALIANZA

LABORATORIOS LETI

LABORATORIOS RUBIÓ

LAMINAR PHARMA

LIFESOME THERAPEUTICS

LILLY

LIM GLOBAL

LOEC INNOVATION

MACROGEN INC SUCURSAL EN ESPAÑA

MATCH BIOSYSTEMS

MDX

MEDHIONINE

MERCK

MICROBIOMA

MICROOMICS SYSTEMS

MICROVIABLE THERAPEUTICS

MINORYX THERAPEUTICS

MIRAMOON PHARMA

MOA BIOTECH

MOLEFY PHARMA

NALON INNOVA

NANO1HEALTH

NANOBOTS THERAPEUTICS

NANOLIGENT

Business members

NANOVEX BIOTECHNOLOGIES

NEURAL OMEGA

NET-PHARMA

NEWBLOCK BIOPHARMA

NOWTURE

NUCAPS NANOTECHNOLOGY

NUAGE THERAPEUTICS

ONCOMATRYX

OPERON

ORBITAL PARADIGM

ORYZON GENOMICS

OWKIN

PONS IP

PHARMABIOS

PHARMALEX SPAIN

PHOENIX BIOSOLUTIONS

PROGENIE MOLECULAR

PROGENIKA BIOPHARMA

PROMEGA

PROTOQSAR

QUIBIM

REIG JOFRE

REMAB THERAPEUTICS

REVEAL GENOMICS

SID

SCIENCE & INNOVATION LINK OFFICE

SECUGEN

SERMES CRO

STAB THERAPEUTICS

STABLEPHARMA

SUCCIPRO

TAAV

NOCTURNA THERAPEUTICS

NORAYBIO

NOSTRUM BIODISCOVERY

NOVARTIS

ONECHAIN IMMUNOTHERAPEUTICS

ONENA MEDICINES

OLAVIDE NEURON STX

ONIRIA THERAPEUTICS

PALOBIOFARMA

PARALAB

PEACHES BIOTECH

POLAR NANOPHARMA

PRASFARMA

PLOID AI BIOTECH

PROALT

PRODUCTLIFE GROUP

PVPHARM

QGENOMICS

QBD GROUP

QUALITECFARMA

REVIO PHARMACEUTICAL CONSULTANTS, SLU

SANOFI

SARTORIUS STEDIM

SAVANA

SERVATRIX BIOMED

SIMBIONTE

SMARTBIO ANALYTICS

SMED CLINICAL RESEARCH

SUNROCK BIOPHARMA

SYMBIONTICS

TALDEKI BIOSOLUTIONS

TECNIC BIOPROCESS EQUIPMENT MANUFACTURING

Business members

TELOMERE THERAPEUTICS

TERAFRONT

TELUM THERAPEUTICS

TEKNIKER

TETRANEURON

TERADX

THERIVA BIOLOGICS

THYTECH

TIGENIX

TRIMERBODY PHARMA

UBIKARE

VAXDYN

VERSA BIOMEDICAL

VETGENOMICS

VIRALGEN VECTOR CODE

VIROFEND THERAPEUTICS

VIVA IN VITRO

VIVEBIOTECH

VIVOTECNIA RESEARCH

VLPBIO

WACKER

WINNING CONSULTING

WATSON-MARLOW

WERFEN

WHOLE GENIX

XENOPATH

YSIOS CAPITAL PARTNERS

ZEISS ESPAÑA

ZECLINICS

ZENDAL

ZYMVOL

Members

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AINIA

SALAMANCA CITY COUNCIL

SPANISH BANK OF ALGAE

BASQUE HEALTH CLUSTER

BIOCAT

BIOFARMA

BIOGA (CLUSTER TECNO-LÓXICO EMPRESARIAL DAS CIENCIAS DA VIDA)

BIOIB

BIOVAL

CEIA3

CENER FOUNDATION

CENTRE FOR PLANT BIOTECHNOLOGY AND GENOMICS

CENTRE FOR SCIENTIFIC AND TECHNOLOGICAL RESEARCH OF EXTREMADURA (CICYTEX)

CIBER

CNIO

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ASEM FEDERATION

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IMDEA ALIMENTACIÓN FOUNDATION

MEDINA FOUNDATION

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FUNDACIÓN SANITAS HOSPITALES

TEÓFILO HERNANDO FOUNDATION

VICOMTECH FOUNDATION VISUAL COMPUTING AND INTERACTION TECHNOLOGY CENTRE

Members

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GERMANS TRIAS I PUJOL RESEARCH INSTITUTE (IGTP)

GOVERNMENT OF LA RIOJA. DG INNOVATION

SPANISH BANK OF ALGAE

HEALTH RESEARCH INSTITUTE HOSPITAL LA FE

CARLOS III HEALTH INSTITUTE (ISCIII)

INSTITUTE FOR BUSINESS COMPETITIVENESS (ICE)

INSTITUTE OF CHEMICAL RESEARCH OF CATALONIA (ICIQ)

PROJECT CLAMBER (IRIAF)

LEITAT

NEIKER

QUBE FOUNDATION

BARCELONA SCIENCE PARK

PROEXCA

PTS GRANADA

SPANISH SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY (SEBBM)

ALFONSO X EL SABIO UNIVERSITY

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RESEARCH INSTITUTE HOSPITAL 12 DE OCTUBRE (I+12)

IQS

RAMÓN Y CAJAL HEALTH RESEARCH INSTITUTE

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SPANISH SOCIETY OF NEUROSCIENCE (SENC)

SPANISH SOCIETY OF MEDICAL ONCOLOGY

SODENA

FUNDACIÓN TECNALIA RESEARCH & INNOVATION

UNIVERSIDAD EUROPEA DE MADRID

VETERINDUSTRIA

Methodology

Chapter 1 – R&D investment

For this chapter, we compiled the results of the Survey on Biotechnology Use and statistics on R&D activities from the National Statistics Institute. 2023.

www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176808&menu=resultados&idp=1254735576669

Chapter 2 – Funding

The data in chapter 2 was compiled from the National Innovation Company (ENISA), the Centre for the Development of Industrial Technology (CDTI), Capital Cell, Sodena, members and the press.

Chapter 3 - Talent and diversity

To obtain the data on the evolution of the number of students enrolled in university studies in biotechnology, we used data from the Statistics on University Students of the Ministry of Universities (https://www.ciencia.gob.es/Ministerio/Estadisticas/SIIU/Estudiantes.html), and selected data since 2015 for all universities that offer undergraduate or masters studies in biotechnology.

To obtain data on the admissions scores, we consulted the scores posted on the Educaweb website and the websites of public universities in March 2025.

To obtain the data on number of researchers, female researchers and percentage of female researchers, we used the INE 2023 Survey on Biotechnology Use and Statistics on R&D activities. www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176808&menu=resultados&idp=1254735576669

For the data on the productivity and salaries of employees at biotech firms, we used the sample of companies compiled by AseBio.

To obtain the results on women in executive teams at biotechnology companies, we used data from the Companies House registry and the websites of companies in the sector, as well as data from the INE and the Institute of Women of the Ministry of Equality. https://www.inmujeres.gob.es/MujerCifras/CienciaTecnologia/Empleo.htm

Chapter 4 – Business fabric

To reflect the number of biotechnology companies, and their breakdown by the field they apply biotechnology in, size and geographic location, we compiled data from the INE Survey on Biotechnology Use and the list of biotechnology companies identified by AseBio.

To put together the list of biotechnology companies started in 2025, we requested information from various entities in the autonomous communities with biotechnology activity.

Chapter 5 – Environment

For the chapter on the regulatory environment —the Biotech Act— we monitored the consultation carried out by the European Commission and identified the most relevant elements it contains.

The data on perception of the biotechnology sector was obtained from a survey of AseBio members, who were asked to rate several factors on how they had affected the biotechnology sector in 2025.

Chapter 6 – Results

To compile this chapter we obtained information from the following sources:

- In the section on production of scientific knowledge, we included the main indicators for Spanish scientific output in biotechnology, provided by the Spanish Foundation for Science and Technology (FECYT), based on data from the Elsevier SciVal tool, which contains the scientific output from the Scopus database.
- Normalised impact is an indicator that compares similar publications, in terms of year published, category and document type. A NI of 1.0 means the paper is cited as often as the global average. A NI of 2.0 means the paper is cited twice as often as the global average.
- To come up with the number of scientific publications by AseBio members in 2025, we requested information from members on their scientific publications in biotechnology, not including communications or posters at congresses or fairs.
- The data on patents was obtained for AseBio in a study carried out by the Madrid Science Park based on the ClarkeModet database. The information was obtained using the methodology designed by ClarkeModet and the Madrid Science Park Foundation, based on OECD definitions for the biotechnology sector. The Clarivate Analytics databases were used. Plus, we checked the public databases of the various offices: Spanish Patent and Trademark Office (OEPM), European Patent Office (EPO), United States Patent and Trademark Office (USPTO), Japan Patent Office (JPO) and the World Intellectual Property Organisation (WIPO).
- The advances in development were compiled from press publications or the websites of AseBio members.
- Both the section on products and services launched in 2025 and their breakdown by areas of activity were put together by consulting AseBio members.

Chapter 7 – Collaboration and internationalisation

The results on partnerships established by biotech companies were obtained from members, checking grant resolutions for biotechnology projects in cooperation with CDTI, AEI and the European Union Horizon programme, and by checking press releases from the various organisations.

The information on international presence of AseBio members was compiled from their websites and by consulting them directly.

Chapter 8 – Impact

The data for this chapter was obtained from a sample of companies collected by AseBio and from the Survey on Biotechnology Use conducted by the National Statistics Institute (INE).

We systematically collected and processed registry information for all companies identified as biotech firms, processing their basic financial statements, balance sheets, and profit and loss statements to get a direct measurement of their business activity.

For each of these companies, we quantified their levels of basic production (turnover), employment, intermediate goods (products and services), value added, salaries (personnel expenditure) and investment over the past 10 years (2015-2024) to get the cumulative levels for all biotech firms, extrapolating the results obtained to the overall totals identified by the INE.

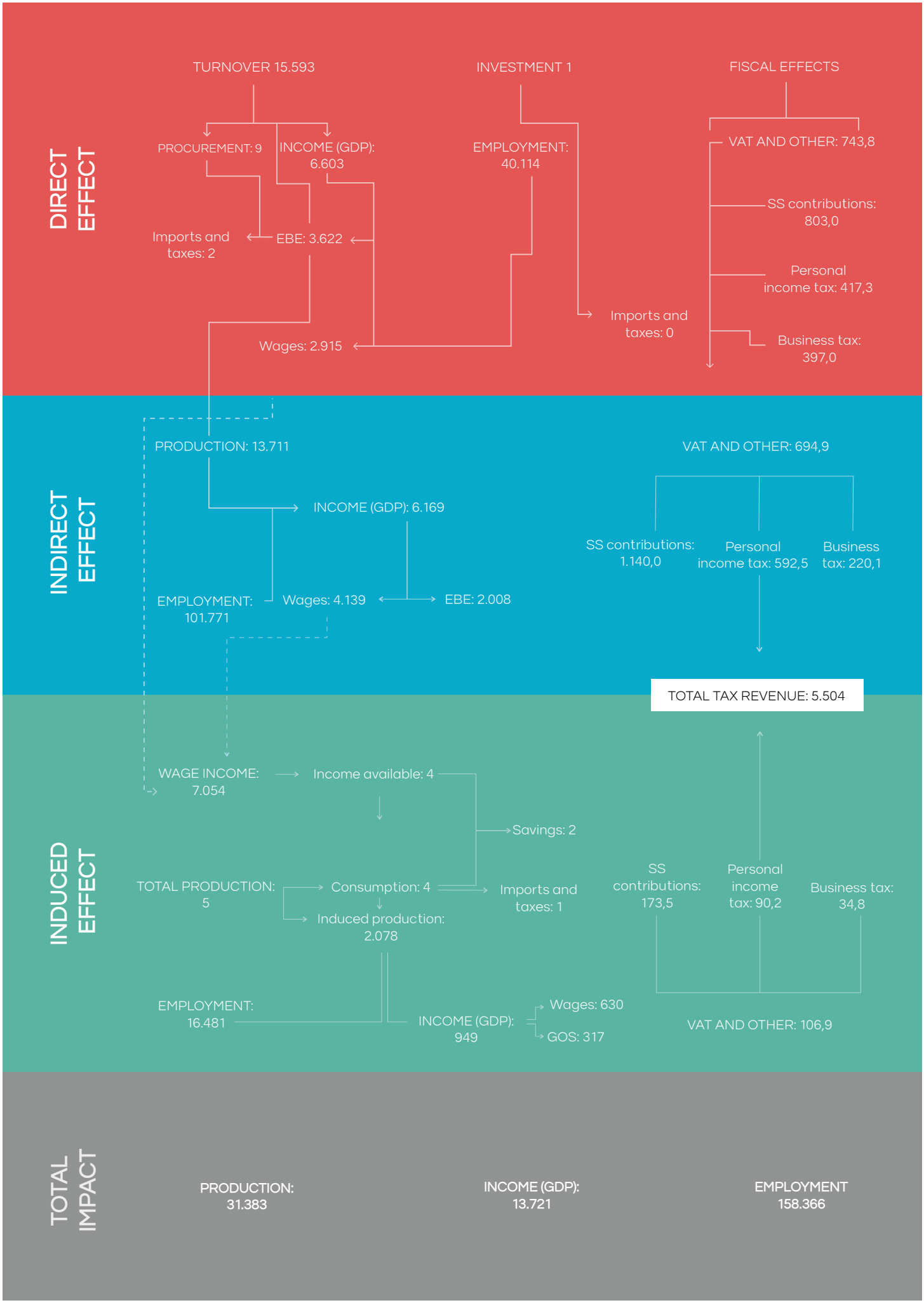
Alongside the detailed analysis of the biotech firms, we also moved forward in quantifying the corresponding levels for companies with biotechnology as a secondary activity and those that use biotechnology as a production tool, which along with biotech firms make up what we call the biotechnology sector.

For these companies, we started with the total employment figures in the INE survey and did an indirect estimation of the other benchmark levels, taking into account both the general ratios in the National Accounting and the specific ones for strictly biotechnology activities calculated previously.

From these figures, we calculated the overall economic impact of the activity carried out by these companies on the Spanish economy as a whole.

This way, using the standard methodology based on input-output tables, we calculated both the direct impact in terms of generating income (GDP), employment and tax revenue, and the indirect impact, based on goods and services purchased by companies with biotechnology activity, plus the induced impact generated by direct and indirect salaries dependent on this activity.

The following figure shows the sequence of calculations for the Impact chapter.


DIRECT EFFECT
TURNOVER 15.593
INVESTMENT 1
FISCAL EFFECTS
PROCUREMENT: 9
INCOME (GDP): 6.603
EMPLOYMENT: 40.114
VAT AND OTHER: 743,8
SS contributions: 803,0
Personal income tax: 417,3
Business tax: 397,0
Imports and taxes: 2
EBE: 3.622
Imports and taxes: 0
Wages: 2.915
INDIRECT EFFECT
PRODUCTION: 13.711
INCOME (GDP): 6.169
VAT AND OTHER: 694,9
SS contributions: 1.140,0
Personal income tax: 592,5
Business tax: 220,1
EMPLOYMENT: 101.771
Wages: 4.139
EBE: 2.008
TOTAL TAX REVENUE: 5.504
INDUCED EFFECT
WAGE INCOME: 7.054
Income available: 4
Savings: 2
TOTAL PRODUCTION: 5
Consumption: 4
Imports and taxes: 1
Induced production: 2.078
SS contributions: 173,5
Personal income tax: 90,2
Business tax: 34,8
EMPLOYMENT: 16.481
INCOME (GDP): 949
Wages: 630
GOS: 317
VAT AND OTHER: 106,9
TOTAL IMPACT
PRODUCTION: 31.383
INCOME (GDP): 13.721
EMPLOYMENT 158.366

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BIO
Asociación
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