

REPORT
biocat

Catalonia Health and
Life Sciences Sector

2024 BioRegion Report

2024

#BioRegionReport

report.biocat.cat

Gold Sponsors:

 **AliraHealth**

AstraZeneca 

Johnson&Johnson

 **GRUPO
MENARINI**

 **Roche**

Key Highlights 2024 BioRegion Report



Ecosystem

1,500 Companies

90% SMEs

94% Barcelona

112 spinoffs

470 startups

93 Research institutions

Macroeconomic impact

7.6% GDP Catalonia

4.1% Industry

3.5% Healthcare Activities

3rd Largest economic sector by turnover and employment

€44,757 M Turnover

57% Industry

7.3% OF CATALONIA'S EMPLOYED POPULATION

281,379 Jobs

27% Industry

Talent

+25,500 Bachelor degrees, masters and PhDs

12,000 Researchers

53%

Industry

€9,707 M Imports

€9,409 M Exports

€2,106 M Foreign direct investment (FDI) (2020-2024)

5,819 New jobs (2020-2024)

50% of the pharmaceutical industry in Spain

24 New innovation hubs (2020-2024)

HOME TO 17 OF THE WORLD'S TOP 20 PHARMA/MEDTECH COMPANIES

Clinical development

5,368 Active clinical trials in Catalonia

78% Commercial

22% Non-commercial

#5 in Europe #8 worldwide

63 Active clinical trials in advanced therapies in Catalonia

35% Phase I

50% Phase II

15% Phase III

#5 in Europe #8 worldwide

75 molecules in the clinical pipeline

21 are advanced therapies

Investment

€347 M Investment in startups and scaleups in the BioRegion (new record 2024)

80% in VC (38 rounds)

75% of international capital

78 Investment firms in the ecosystem

Research

EUROPEAN LEADERS IN HIGH-IMPACT RESEARCH (2013-2023)

#5 in scientific publications and 1st in % of HCPs in Europe

#3 in publications and 3rd in HCP in advanced therapies in Europe

Main research areas (based on HCPs)

- Oncology
- Internal medicine
- Gastroenterology and hepatology
- Clinical neurology
- Cardiovascular system
- Respiratory system

AI

168 AI tools registered in Catalonia

155 Companies

Source: Biocat

Summary

Preface

1 Overview and key indicators

• Catalonia’s health innovation ecosystem continues to grow	6
• Evolution of the main macroeconomic indicators	7
• Catalonia, 2nd in healthcare product exports and imports in Spain	8
• AstraZeneca boosts Foreign Direct Investment in Catalonia for second year in a row	9
• Catalonia is home to around 50% of Spain’s pharmaceutical industry and 79 drug production plants	10
• The key role of SMEs in growing the ecosystem	11
• The BioRegion as a centre for attracting and generating specialised healthcare talent	12
• A good rate of startup creation and low mortality rate	13
• Technology transfer from research centres (2020-2024)	14
• Key initiatives and new infrastructures promoted in the BioRegion	15
• Moving forward in science, medicine and care services from Catalonia	16

2 Investment and funding in startups and scaleups

• New record for venture capital investment in startups and scaleups	18
• 75% of the venture capital involves international investment participation	19
• 108 new international VC firms have invested in the BioRegion in the past 5 years	20
• Increase in volume of investment rounds, number of exits and M&A activity	21
• The BioRegion withstands the global slowdown in health investment	22

3 Science and technology assets

• Catalonia, 2nd in Horizon projects funding and 5th in ERC Grants in Europe	24
• Catalonia, 5th in scientific publications and 1st in % of Highly Cited Papers in Europe	25
• Catalonia, 3rd in publications and 3rd in Highly Cited Papers in advanced therapies in Europe	26
• Leadership of Catalonia’s scientific community in global rankings	27
• Catalonia ranks 5th in Europe and 8th worldwide in active clinical trials	28
• Industry-hospital partnerships, the key to the strength of clinical trials in Catalonia	29
• A dynamic pipeline: 75 molecules and therapies in clinical development	30
• Leading the development of advanced therapies from Catalonia	31
• ATMP Catalonia: building one of Europe’s front-runner hubs in advanced therapies	32
• Healthtech products and services pipeline (2024)	33
• Business model and collaborations in healthtech products and services	34
• Snapshot of Artificial Intelligence (AI) in the BioRegion: 168 AI tools, mainly used in hospitals	35
• Diversification, investment and innovation of healthcare AI companies in Catalonia	36
• 112 startups and scaleups working in healthcare AI in Catalonia	37
• Catalonia, leading synthetic biology (SynBio) hub in Spain, with 168 companies	38
• 27 startups and scaleups working in women’s health in Catalonia	39
• 52 companies working in mental health in Catalonia	40
• 17 startups and scaleups working in paediatric health in Catalonia	41
• Investment in R&D and corporate collaborators	42

4 Current and future health innovation hubs in Barcelona

• Current concentration of life sciences innovation hubs in Barcelona	44
• Projected future concentration of life sciences innovation hubs in Barcelona	45

5 Methodology and Acknowledgements

A North Star for Europe: innovation, funding, simplification

Some people are calling 2024 the “Year of Draghi”, when we collectively became aware of the risk of innovation from Europe being wiped from the global game board and that - possibly - legitimately spread European values could be perceived as constraining but would be more necessary than ever. It was also the year when an Internet behemoth solved a decades-old biochemical mystery and when the regulation on the secondary use of health data should have been rolled out across all European spaces. In this preface to the 2024 BioRegion of Catalonia Report, we have chosen to talk about technology, the challenges of the health innovation ecosystem and - as is appropriate on such occasions - the European and global framework.

The list of developments with an impact on our sector is extensive: the AI Act, with its risk levels and immense possibilities, in which health plays a pivotal role; the recovery of investment in biotechnology and how it is expected to be expressed in the BioRegion; the carbon footprint and how the sector can be an active player in Planetary Health; the polarisation between the US and China in investment in global research and innovation and how the cost of training AI matters more to these giants than the process of passing laws on it. But we have focused on 3 points we found inspiring to craft the roadmap our industry could be travelling on in the near future. The following paragraphs are dedicated to them.

Technology: the Nobel Prize for Protein Folding

In early October 2024, Baker, Hassabis and Jumper received the Nobel Prize in Chemistry for achieving an almost impossible feat: applying artificial intelligence to create new amino acid structures and solve a crucial problem for biomedicine that had been lying in the dark for decades. The fact that a team from a tech firm (to oversimplify) received an academic Nobel with enormous repercussions on Personalised Medicine is a paradigm shift driven by the Google DeepMind team that should not go unnoticed. It has not escaped the attention of the global pharma industry that generative AI can yield thousands of millions of dollars (from \$60,000 to \$110,000 per year) right across the value chain.

Geopolitics: The Compass shaping Europe’s new term

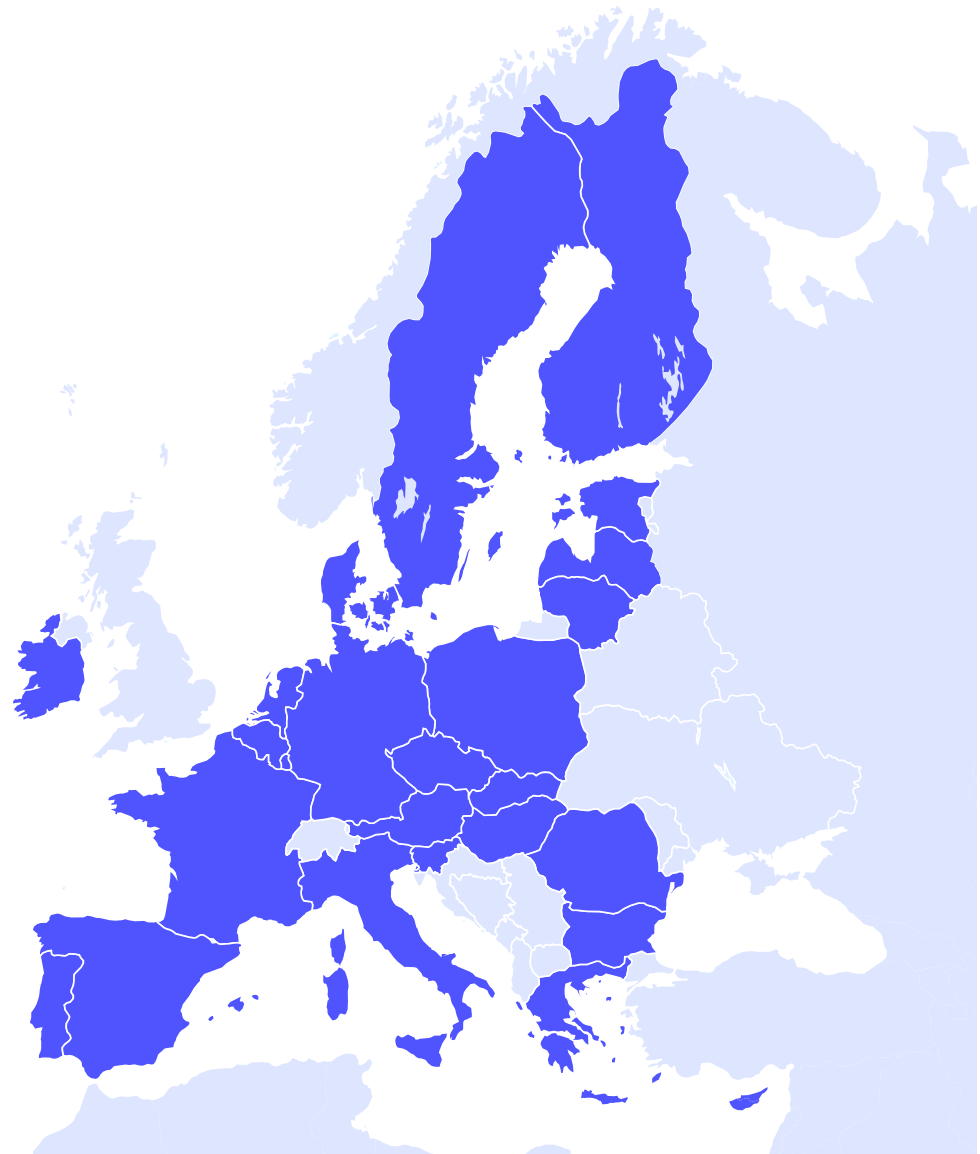
The new ‘Von der Leyen Commission’ was established on 1 December 2024 with the firm mandate that European values were to be nurtured and protected, and to do so it was necessary to take a series of decisions on the competitiveness and strategic sovereignty to be embodied in the future EU Compass. The Commission is keen to use this term (through to 2029) to solve the weaknesses that Mario Draghi, Enrico Letta and Manuel Heitor had pointed out regarding Europe’s global position and the functioning of the single market. If the EU is disproportionately more specialised in less complex technologies than its counterparts (USA, China and Japan) and this is holding back its potential for future growth, the next few years could be decisive, and our sector is one of those primed for a transformation that can be seen as a wakeup call which the BioRegion is in a position to leverage.

Plenty in the legislative pipeline for Europe 2025-26

On the starter’s block of the European regulatory and legislative framework to propel the Union and its territories in the race to recover positions are several regulations that have stirred the industry’s interest. One is the ongoing reform of pharmaceutical legislation (Pharmaceutical Package) to stimulate innovation and improve access to medicines, with controversial points around the delicate balance between encouraging innovation and spurring on competition. It is unclear whether it will be adopted in 2025. The Critical Medicines Act aims to ensure the safety of critical medicine supplies by diversifying supply chains and boosting the European manufacture of generics and APIs. It has touchpoints with the work of DG HERA’s Critical Medicines Alliance to identify medicines essential for the European population and could have its moment around March 2025. The Biotech Act is planned for 2025 or 2026 and aims to take biotech out of the laboratory into the manufacturing plant and from there to market, innovating in clinical trials and technology assessment while improving regulatory pathways, encouraging investment and reducing the sector’s carbon footprint. The Commission has started with the creation of the Biotech and Biomanufacturing Hub, with resources for innovating enterprises in this segment. There are also calls for an urgent revision of the regulations around medical and in vitro devices (MDR and IVDR) to accelerate their approval, centralising elements of the process and perhaps awarding a larger role to the European Medicines Agency. Olivér Várhelyi, the new commissioner for Animal Health and Welfare, has tabled it for his first 100 days in office. Finally, Omnibus 2025 is a package that may see the light of day in Q1 2025 and which the Commission plans

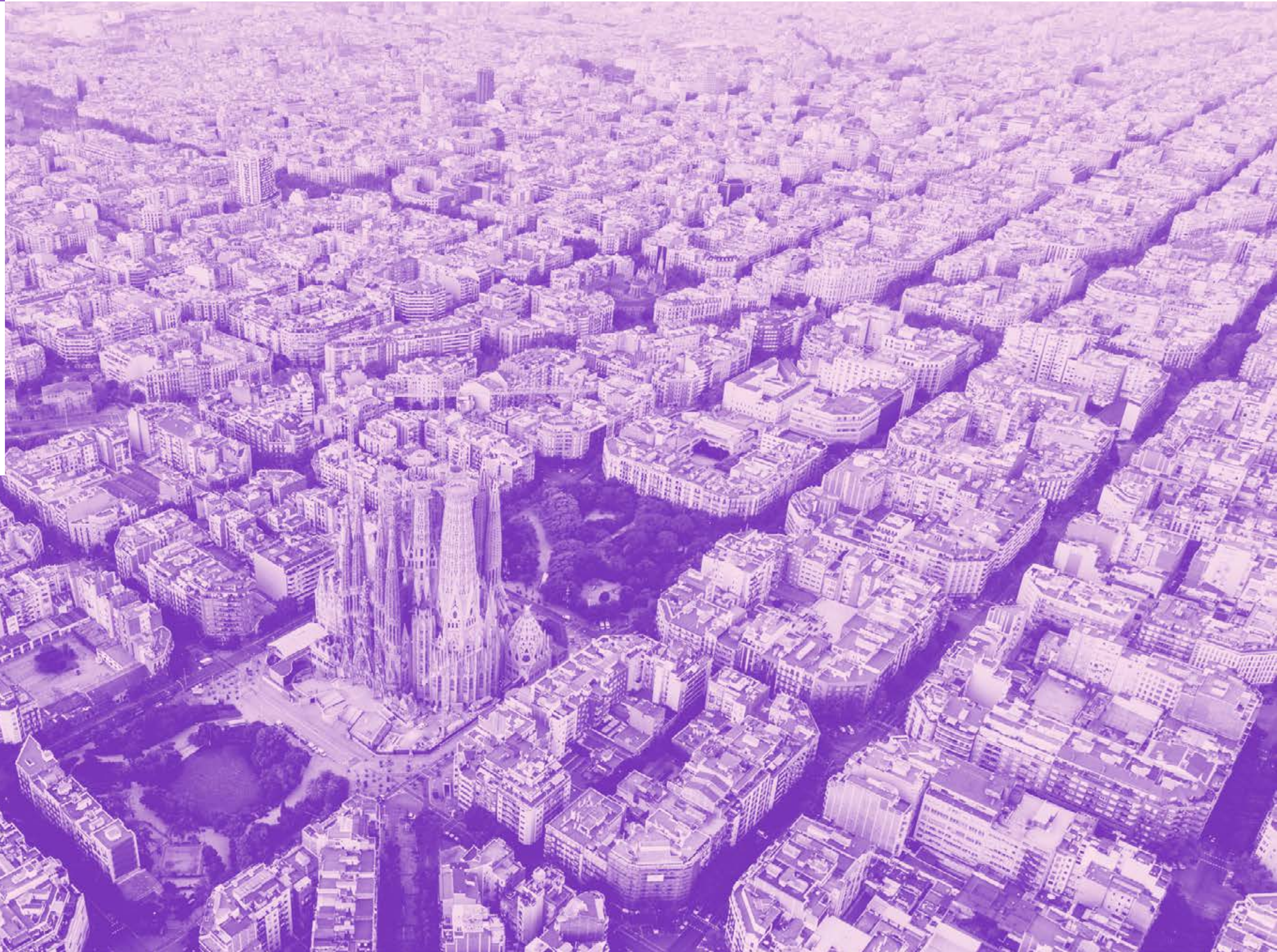
to leverage to simplify the administrative burden of companies by an average of 30% and review the denomination of SMEs and mid-caps to facilitate business for thousands of European firms.

There are more recent initiatives or ones in preparation for 2025 and 2026: the Regulatory Framework for the EHDS, the Strategy for Startups and Scaleups, the European Innovation Law, the AI Factories Initiative, the Life Sciences Strategy...One thread connects them all: the political, financial and administrative support for the technology and innovation needed to reactivate European industry across key sectors and to address the obstacles that prevent the appearance and growth of new enterprises. The BioRegion of Catalonia has the capacity to step up to this challenge of becoming more competitive while guaranteeing people’s wellbeing, and to nurture and protect the values of a Europe that is attractive to investors and to the talent that dreams of growing unicorns.



1 Overview and key indicators

Photograph: Sagrada Familia, Eixample neighbourhood of Barcelona







Catalonia’s health innovation ecosystem continues to grow

The life sciences and healthcare sector in Catalonia — the BioRegion of Catalonia — is strengthening its position as one of the key drivers of innovation and economic and social advancement in the country. The indicators presented in this tenth edition of the Report show that the sector continued to grow in 2024.

With more than 1,500 companies and 93 health research entities, the ecosystem generates a total economic impact equivalent to 7.6% of Catalonia’s GDP (4.1% from industry and 3.5% from healthcare activities). It is also 3rd in terms of added value and employment within the Catalan economy. The sector is characterised by diversification among the four key industry segments (biotechnology, digital health, medical technologies and pharmaceuticals), as well as a strong network of specialised investors and an extensive business network of service providers and consultants.

Classification of the healthcare sector among the main economic activities of Catalonia

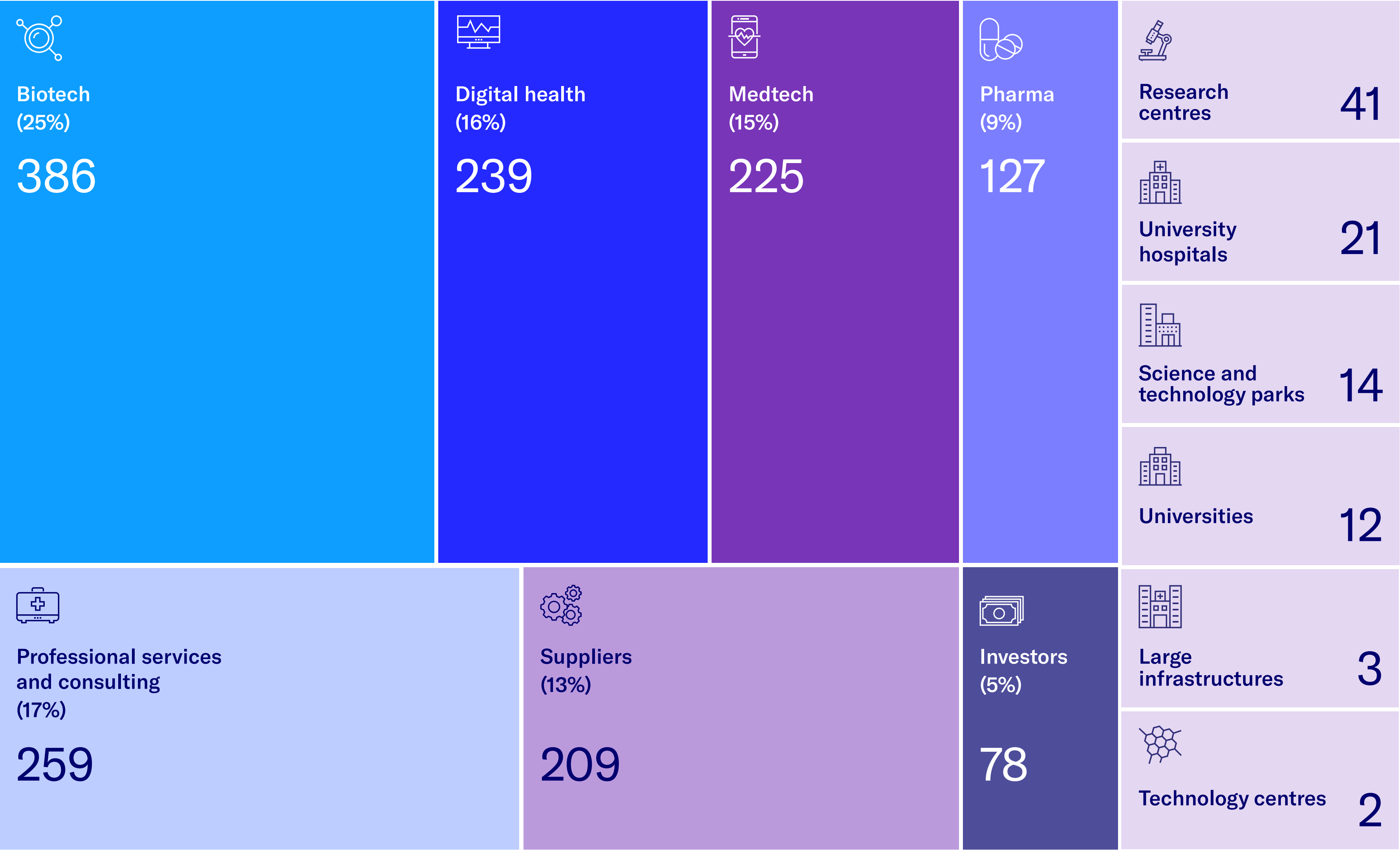
		
Commerce	#1	#1
Real estate activities	#2	#16
Health	#3	#3
Tourism	#8	#2

 GVA  Employment

Map of the BioRegion of Catalonia ecosystem 2024

+1,500 companies

93 research institutions



Source: CTESC based on the report *The Health Sector in Catalonia* (2024)

Source: Biocat (December 2024)

Evolution of the main macroeconomic indicators





According to the latest available figures, turnover and employment in the life sciences and healthcare sector continued to grow significantly, with a compound annual growth rate (CAGR) of 4.4%, higher than that recorded than that recorded the previous year.

Total turnover, including healthcare companies and activities, came to nearly 44,800 million euros, representing a 6% rise over the previous year.

Regarding employment, the sector generated 17,500 new jobs, reaching a total of almost 75,400 employees, equivalent to 7.3% of the employed population in Catalonia.

As can be seen in the table below, the province of Barcelona concentrates most of the activity and economic impact of the healthcare sector in Catalonia, since 94% of the total number of sector companies and entities are located there.

Economic impact and employment in healthcare in the provinces of Catalonia (2023) ▾

					
1	Barcelona	1,079	416	€24,073 M	71,584
	Barcelona	577	267	€12,081 M	31,758
	Sant Cugat del Vallès	58	21	€2,678 M	5,822
	Cerdanyola del Vallès	40	14	€403 M	1,766
	L'Hospitalet de Llobregat	29	12	€1,090 M	3,014
	Terrassa	23	6	€605 M	1,894
2	Girona	34	14	€576 M	2,219
3	Tarragona	33	13	€673 M	1,202
4	Lleida	15	5	€169 M	374

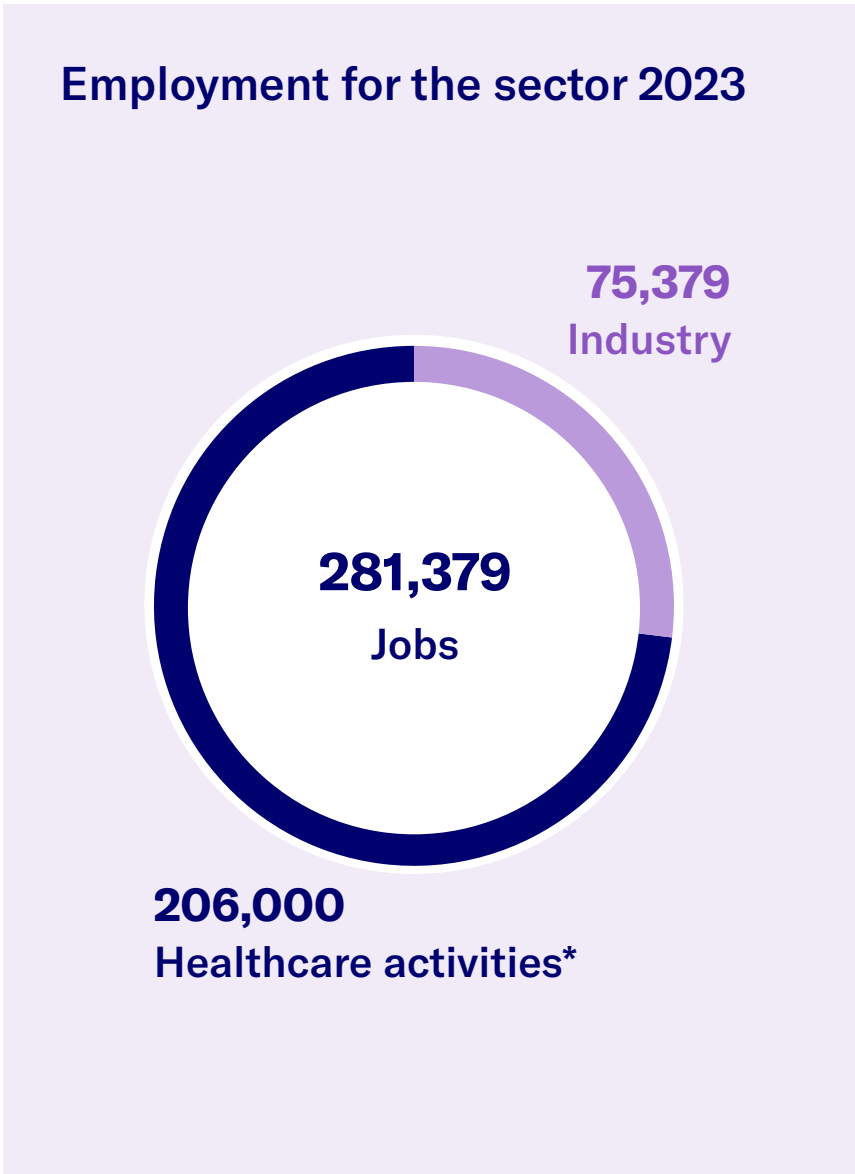
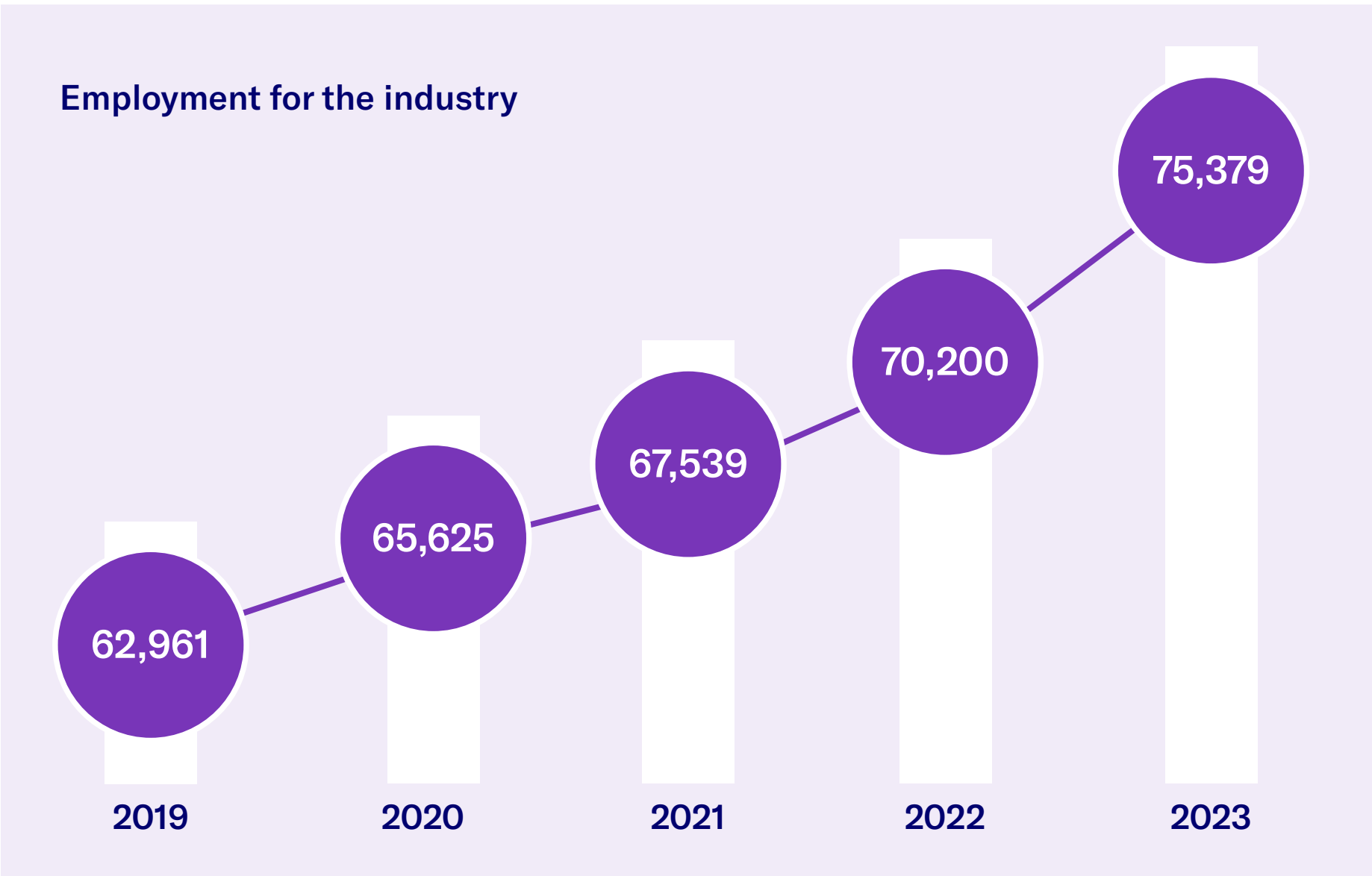
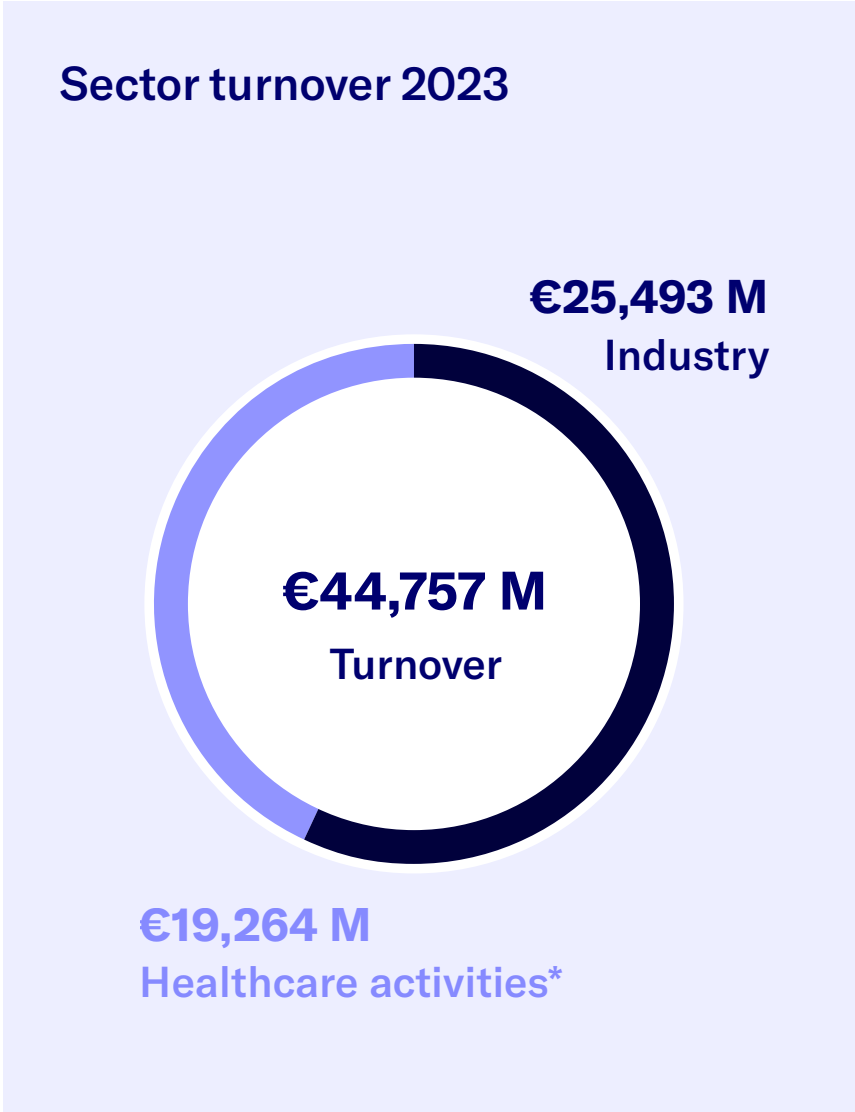
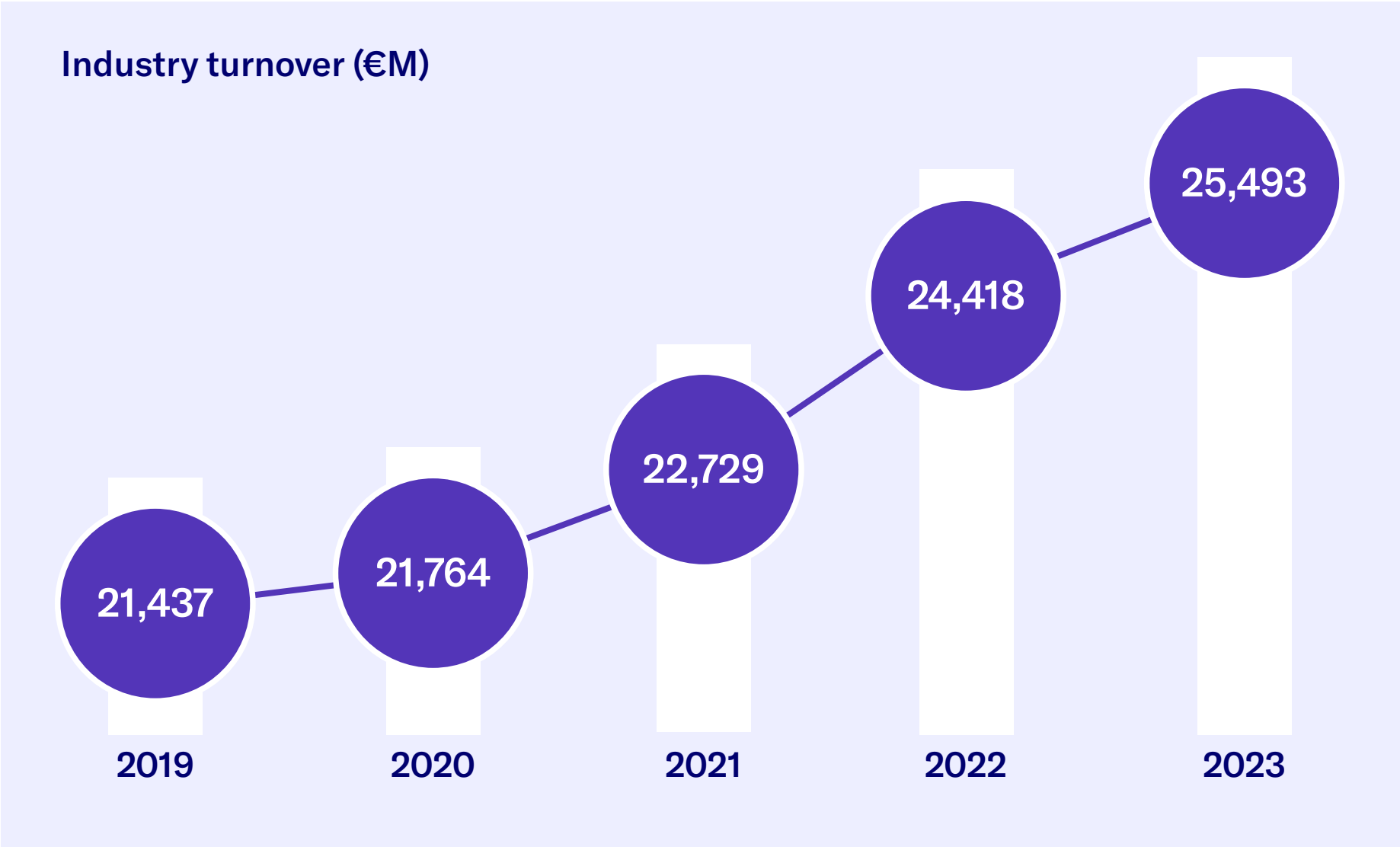
 Companies

 Startups

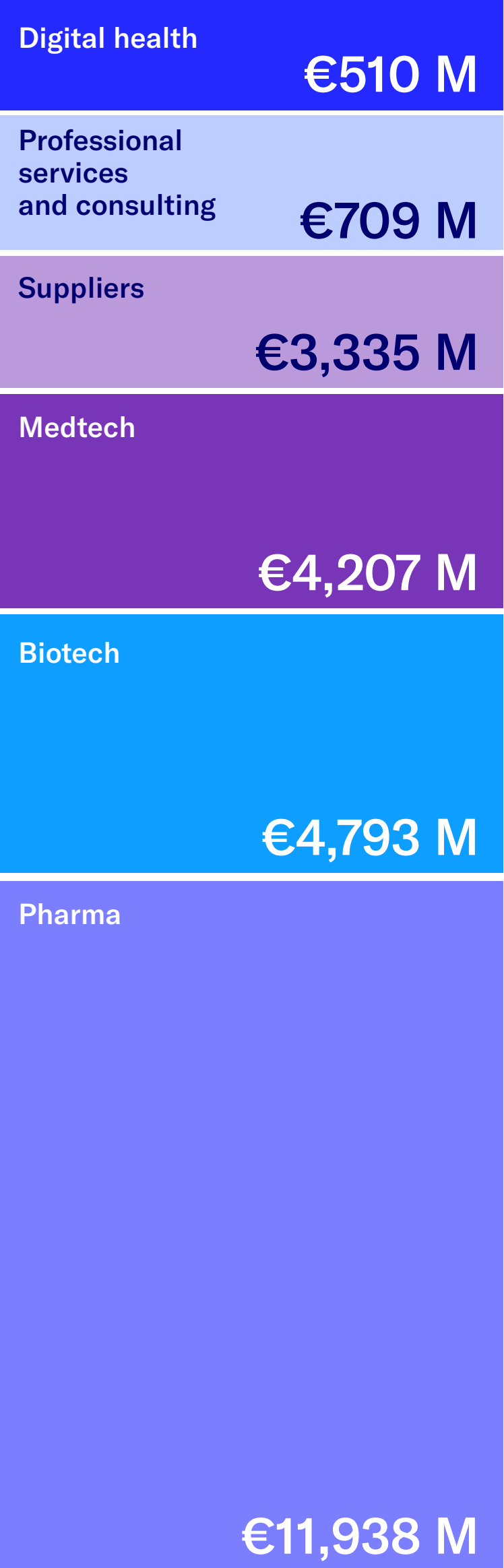
 Turnover

 Employment

Macroeconomic indicators



Industry turnover 2023



* Healthcare activities: includes the provision of healthcare and social services to healthcare institutions providing accommodation and offering diagnostic and medical treatments to patients.

Catalonia, 2nd in healthcare product exports and imports in Spain

Exports

€9,409 M

Exports in life sciences and healthcare products (2023), 6% more than the previous year.

41% of Spain

In 2023, Catalonia reinforced its leadership in health product exports, reaching 41% of the national total, a significant increase over the 31% of the previous year. Although Madrid maintained the first position with 48%, its contribution fell substantially from the 61% recorded in 2022, reflecting an adjustment following the peak in COVID-19 vaccine sales.

9%

Of the total exports from Catalonia.

Imports

€9,707 M

Imports in life sciences and healthcare products (2023), 0.3% less than the previous year.

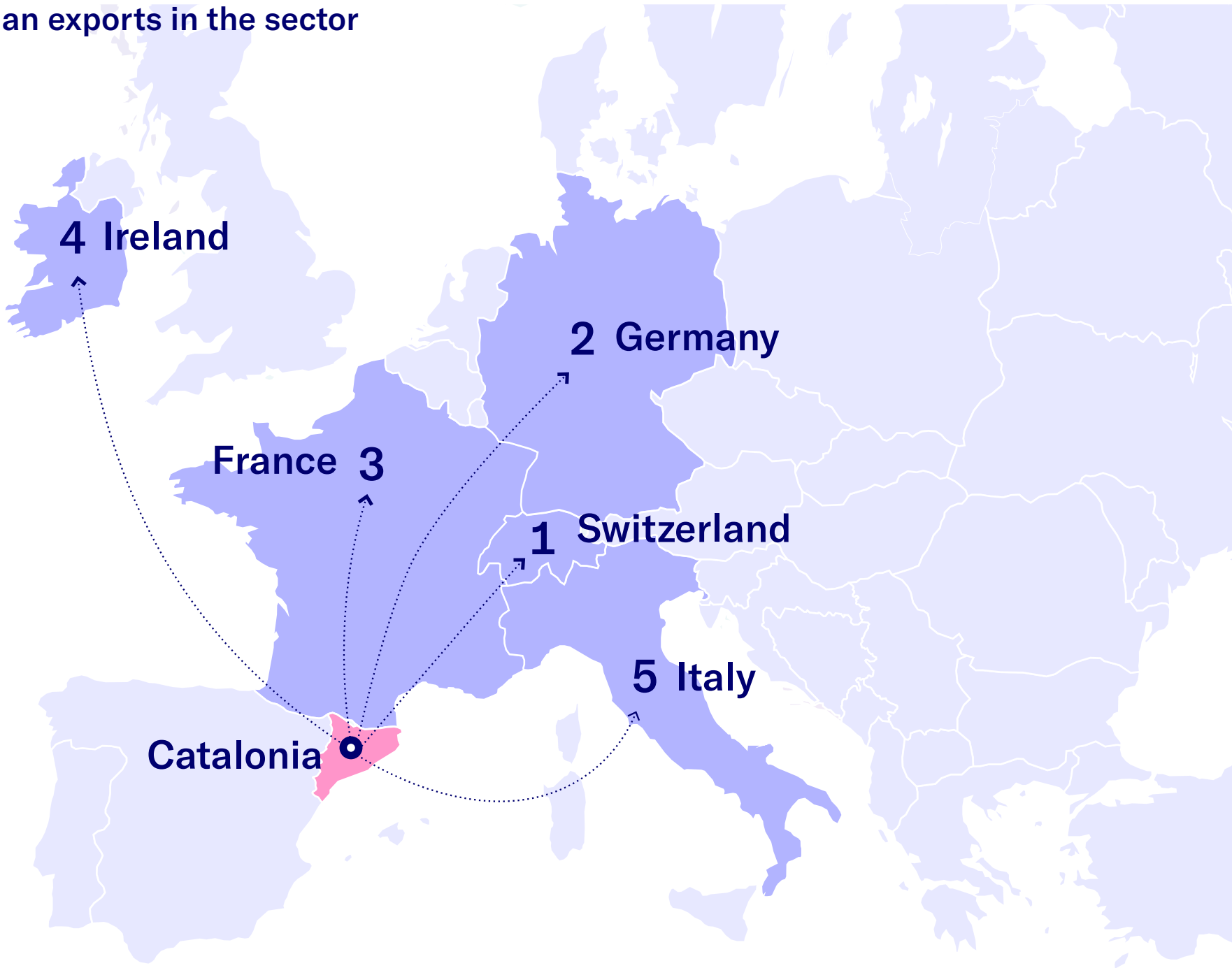
32.5% of Spain

In 2023, Catalonia remains the second-largest autonomous community in healthcare product imports in Spain, with 32.5% of the Spanish total, coming in above the 31.1% of 2022. Although Madrid was first, with 56.1%, Catalonia stood out for its dynamism and strategic role in healthcare supply, with Germany, the US, Switzerland, the UK and Italy as its five main trading partners.

9%

Of the total imports from Catalonia.

Main destinations of Catalan exports in the sector



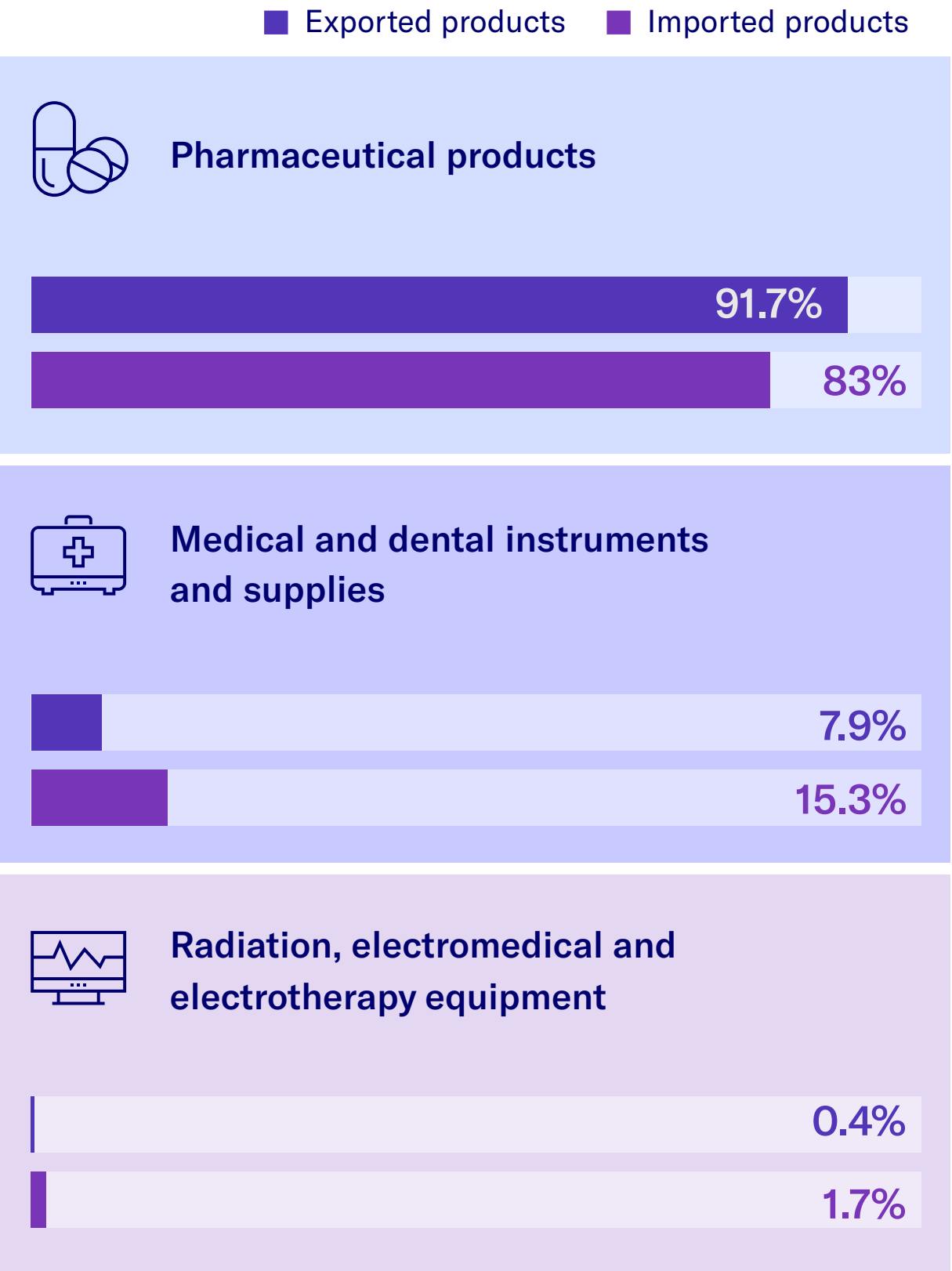
781 subsidiaries abroad of Catalan companies in the life sciences and healthcare sector



Sources: ACCIÓ and Biocat

Note: illustrative, non-comprehensive list of companies present abroad.

Products



Leading regular* exporting companies



* Companies that have exported over the past 4 consecutive years.

Source: ACCIÓ based on DATACOMEX, ICEX (Provisional data from 2023, downloaded in October 2024)

AstraZeneca boosts Foreign Direct Investment in Catalonia for second year in a row

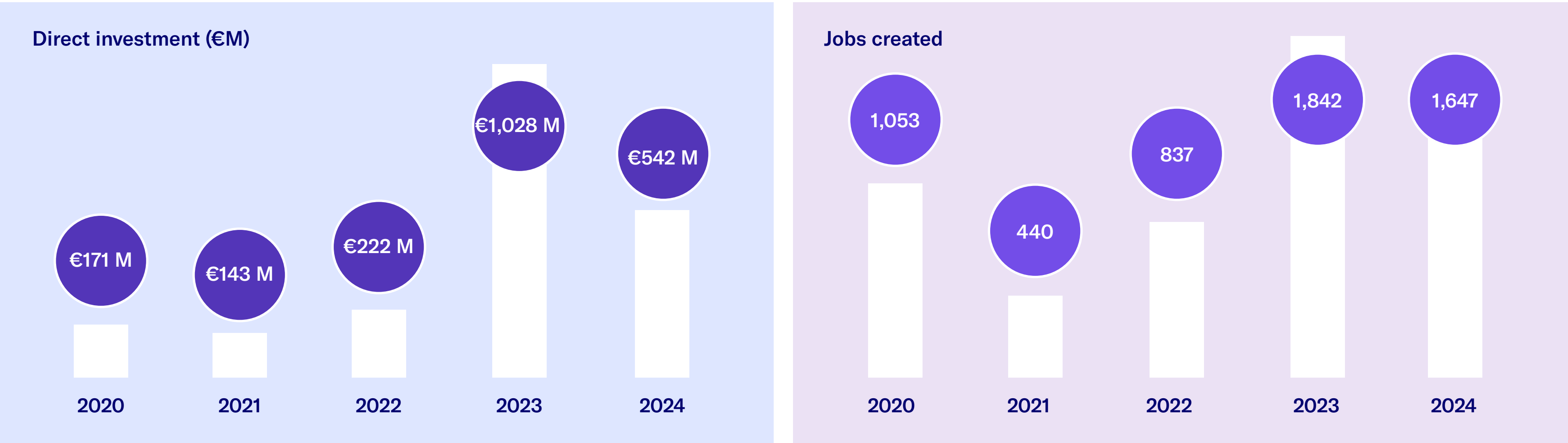
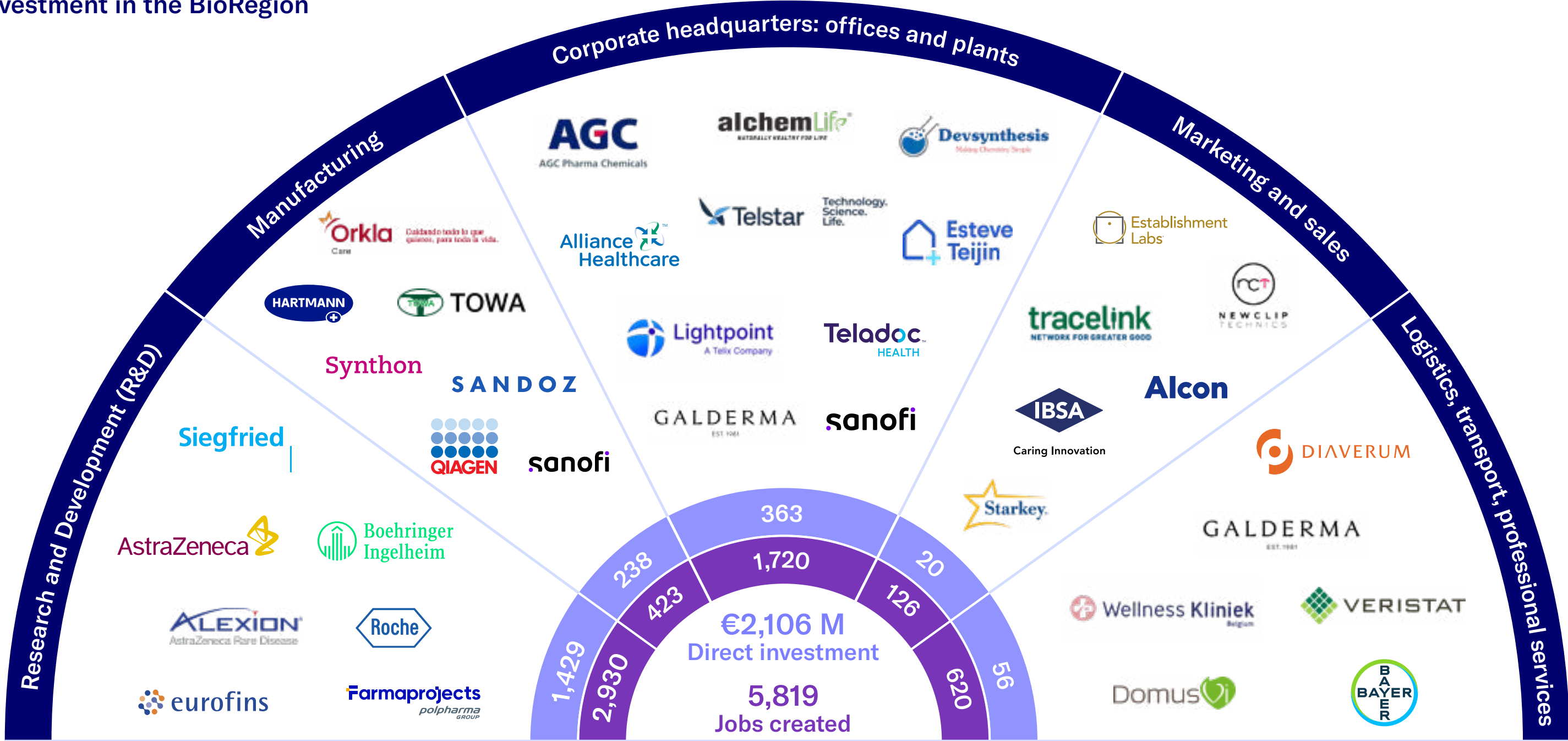
Between 2020 and 2024, the sector received a total of 2,106 million euros in Foreign Direct Investment (FDI), an increase of 25% compared to the previous period (2019-2023). This growth also had a significant impact on employment, with the creation of 5,819 new jobs, an increase of 24% over the past five years.

2024 set another record, with investment of 550 million euros and almost 1,700 new jobs, driven once again by multinational AstraZeneca, which reaffirmed its commitment to Catalonia. On a smaller but also outstanding scale were other companies such as Galderma, Towa and the recent investment of Qiagen, which established an innovation centre to develop diagnostic solutions for infectious diseases worldwide.

Top 10 countries in investment and jobs (2020-2024) ↘

Direct investment (€M)		Jobs created	
UK	€1,331 M	UK	2,605
Japan	€216 M	US	928
Switzerland	€198 M	Switzerland	562
US	€144 M	Japan	497
Netherlands	€58 M	France	391
Germany	€54 M	India	298
France	€53 M	Germany	286
India	€38 M	Netherlands	115
Belgium	€8 M	Sweden	84
Norway	€3 M	Belgium	30

Foreign Direct Investment in the BioRegion
(2020-2024)



Source: ACCIÓ based on FDI Markets. 2024 figures to October

Catalonia is home to around 50% of Spain’s pharmaceutical industry and 79 drug production plants

Its strategic location in Europe, access to highly qualified scientific and technological talent, excellent infrastructure and research centres and competitive costs are, together with the collaboration of the Administration, key factors driving business development and the constant attraction of large global multinationals to Barcelona and Catalonia. Catalonia concentrates around 50% of the pharmaceutical industry in Spain¹ and is home to innovation hubs, subsidiaries and the R&D, production and logistics plants of most of the pharmaceutical and medtech companies ranked in the top 20 worldwide, such as AstraZeneca, Amgen, Fresenius, Johnson & Johnson, Medtronic, Merck, Novartis, Pfizer, Roche and Sanofi. It also boasts the head offices of a powerful clutch of Catalan multinationals, such as Almirall, Grifols, Esteve, Ferrer, Bioiberica, Reig Jofré, Salvat and Werfen.

In 2024, this dynamism was reaffirmed with projects such as the new HIPRA innovation campus in Aiguaviva, the creation of Almirall’s new “The Hive” hub, Qiagen’s new global infections hub in Esplugues, the inauguration of B. Braun’s new centre and the expansion of the Bayer hub.

Multinationals with headquarters in the BioRegion

R&D, production plant and logistics centre ↘



Hubs and subsidiaries of multinationals in the BioRegion

R&D, production plant and/or logistics centre ↘



R&D ↘



Production plant and/or logistics centre ↘



Commercial office ↘



★ Companies in the top 20 worldwide by turnover (2023).

* Galenicum only has R&D in the BioRegion, while production takes place outside Catalonia.

Sources: ACCIÓ and Biocat

Note: partial representative sample of multinationals established in the BioRegion of Catalonia by turnover.

¹Source: Farmaindustria

The key role of SMEs in growing the ecosystem

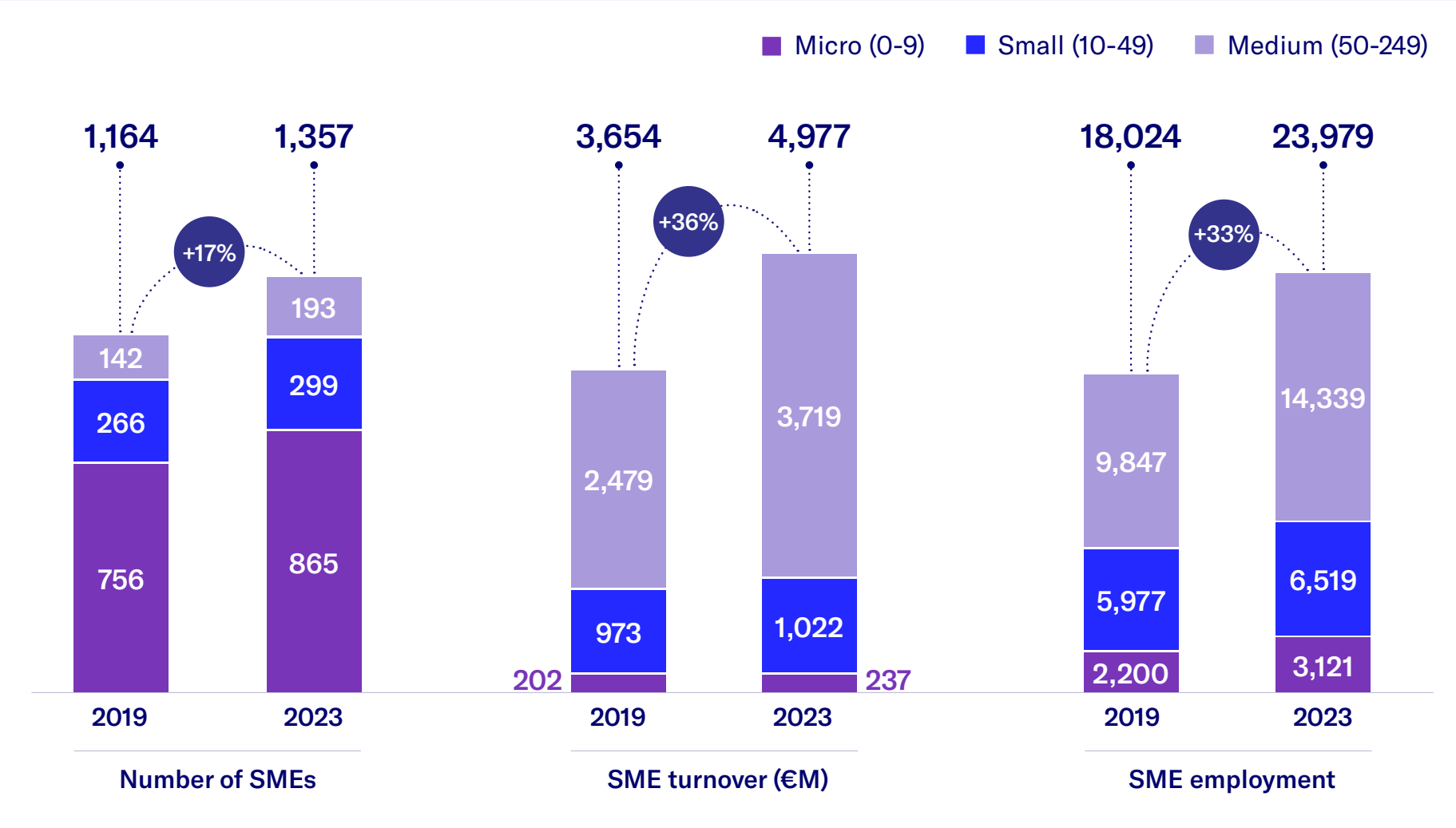
In this year’s Report, for the first time we publish an analysis of a key segment of the life sciences and healthcare sector in Catalonia: small and medium-sized enterprises (SMEs), which in 2023 totalled 1,357 companies, some 90% of the total number of companies in the sector. They also contributed 20% to total industry turnover and 32% to employment*.

According to the macroeconomic indicators, we can see that SMEs, especially medium-sized enterprises, have grown by more than 30% in turnover and employment in recent years. By subsector, medium-sized biotechnology and medical technology enterprises stand out, with approximately 6,600 and 3,400 employees, respectively.

With regards therapeutic areas, there are five with similar figures: nervous system (14%), oncology (13%), cardiovascular system (11%), mental health (11%) and dermatology (11%).

Finally, we would highlight a number of enterprises that have experienced significant growth across all indicators in recent years: GP Pharm, Implant Prótesis Dental, Indiba and Terrats Medical.

Macroeconomic indicators for SMEs

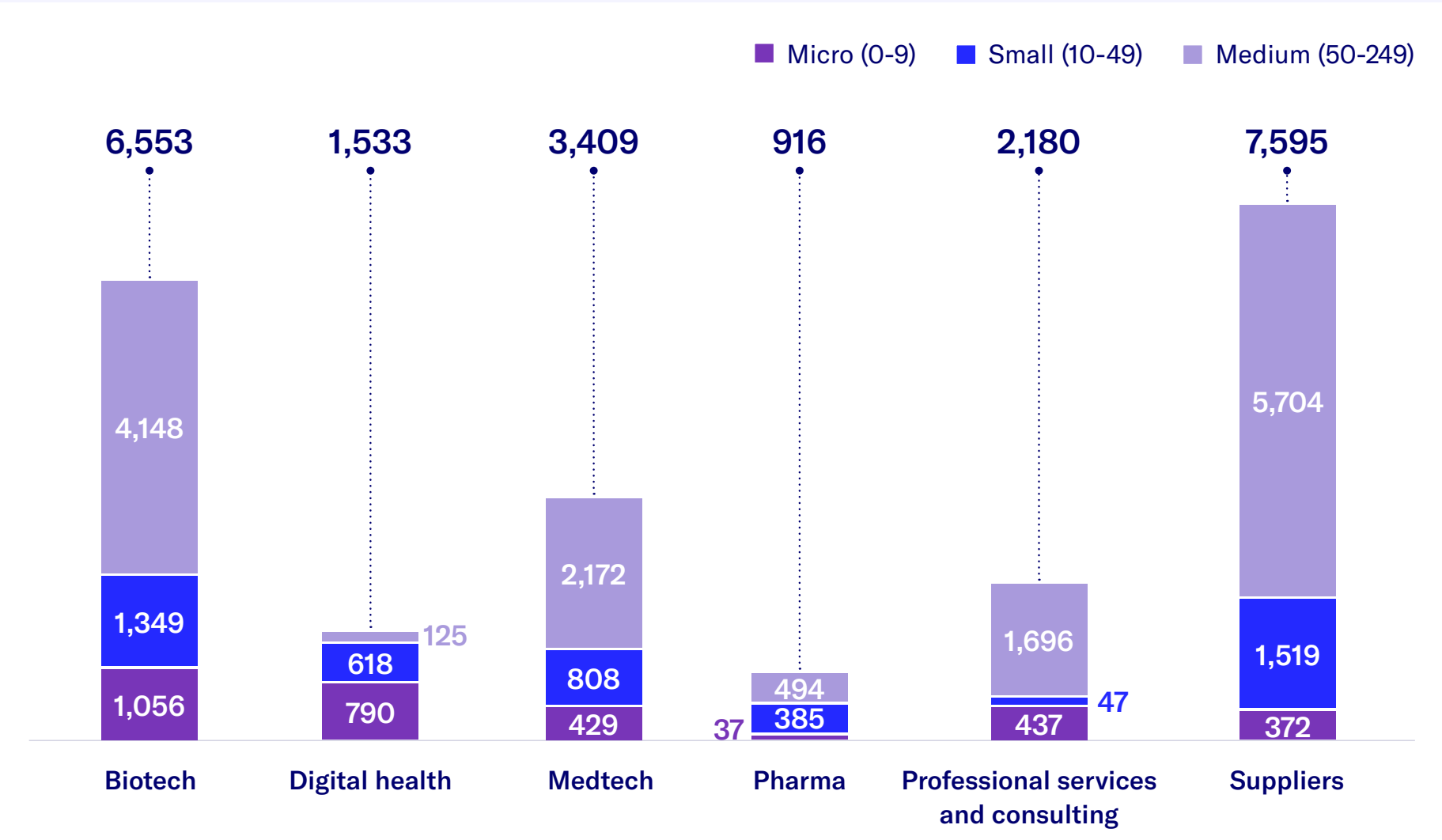


Principal SMEs in the BioRegion

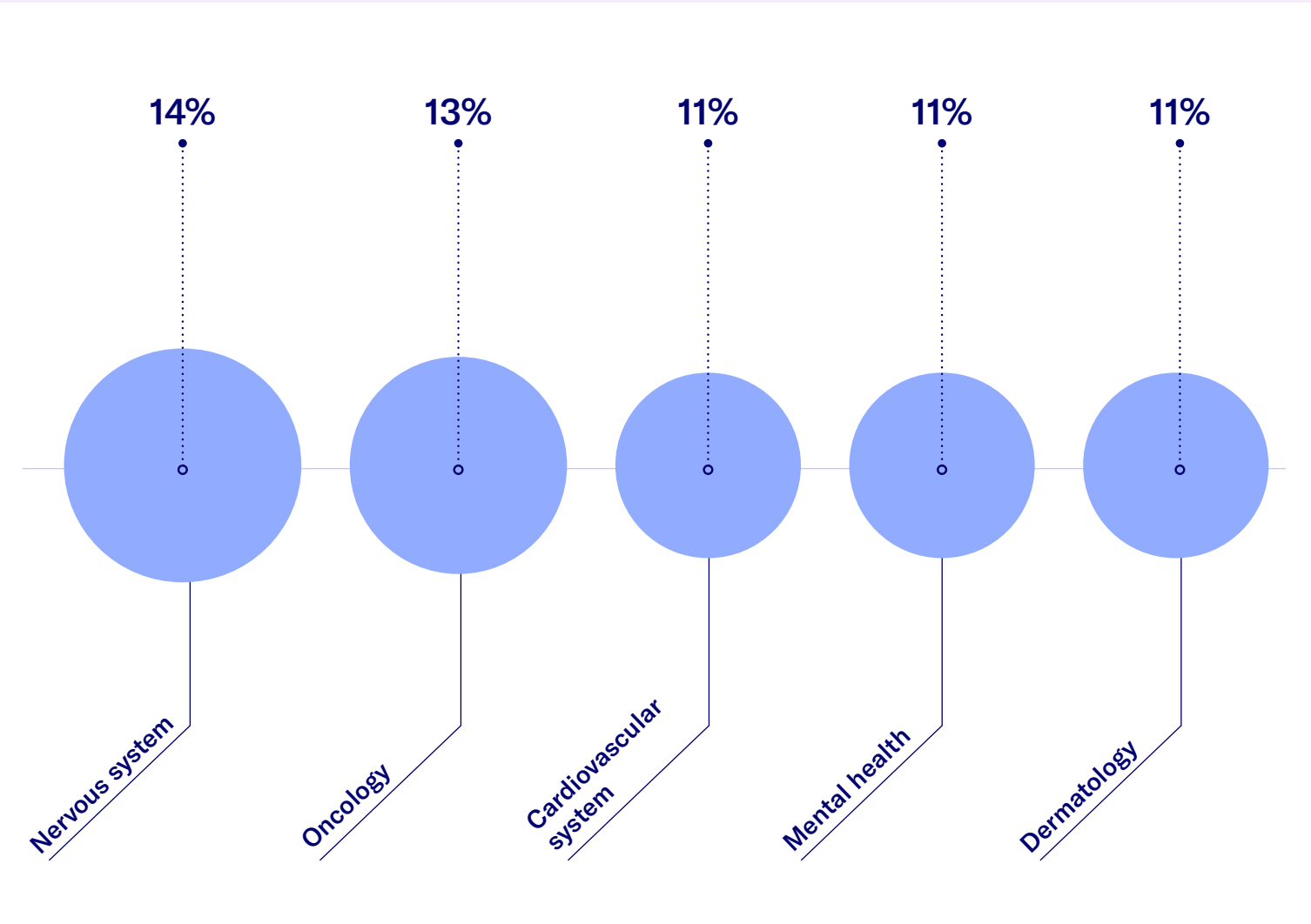


Note: sample of enterprises that have grown the most in the past 5 years.

Employment in SMEs by subsector (2023)



Main therapeutic areas



* See complete map of the BioRegion on page 6.

Sources: SABI and Biocat
Note: turnover and employment figures are for the 1,100 companies for which SABI has balance sheets (2019-2023).

The BioRegion as a centre for attracting and generating specialised healthcare talent

Twenty-three new digital hubs and health- or applied-health hubs of excellence were established in Barcelona between 2020 and 2024. Scientific and entrepreneurial talent in Catalonia, especially in Barcelona, is a key element for the attraction of multinationals thanks to several factors:

1) **high qualification and specialised education:** with more than 15,000 annual STEM graduates and a constant flow of PhDs and masters in life sciences, multinationals have access to highly skilled teams for innovative projects;

2) **a consolidated innovation ecosystem:** Barcelona is a global hub where startups, large corporations and research centres converge, fostering collaboration in scientific and technological developments;

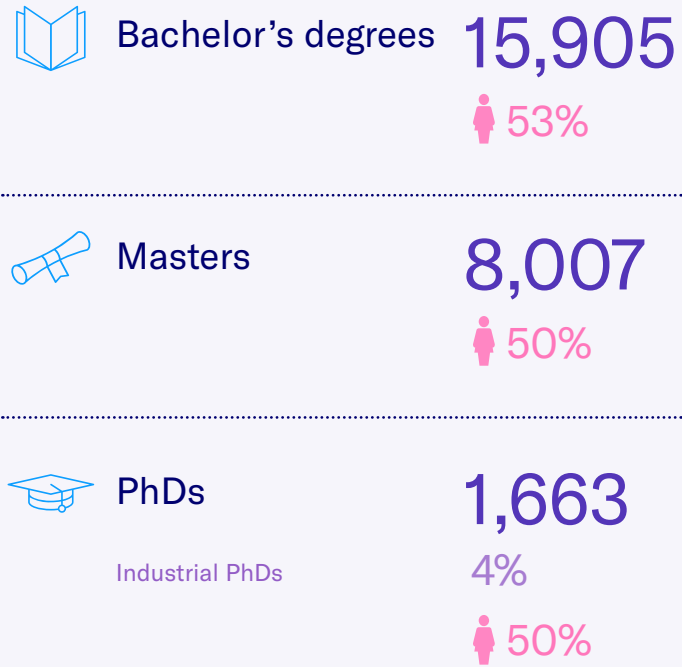
(3) **dynamic and international entrepreneurship:** with more than 470 life science startups and scaleups, the city offers an ideal environment for rapid innovation and disruptive technology collaborations;

(4) **public-private infrastructure and support:** Barcelona has world-class research centres, science parks and hospitals, as well as public incentives for attracting investment and business growth.

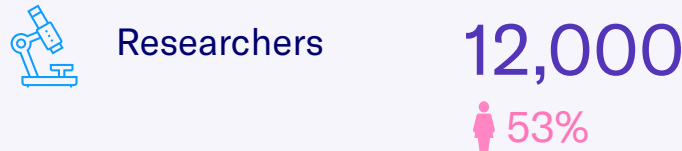
(5) **competitive quality-of-life costs:** the city offers lower costs than other European hubs, along with a quality of life that facilitates the attraction and retention of international talent.

Talent generation in the BioRegion

Total annual university graduates in scientific fields (2023)



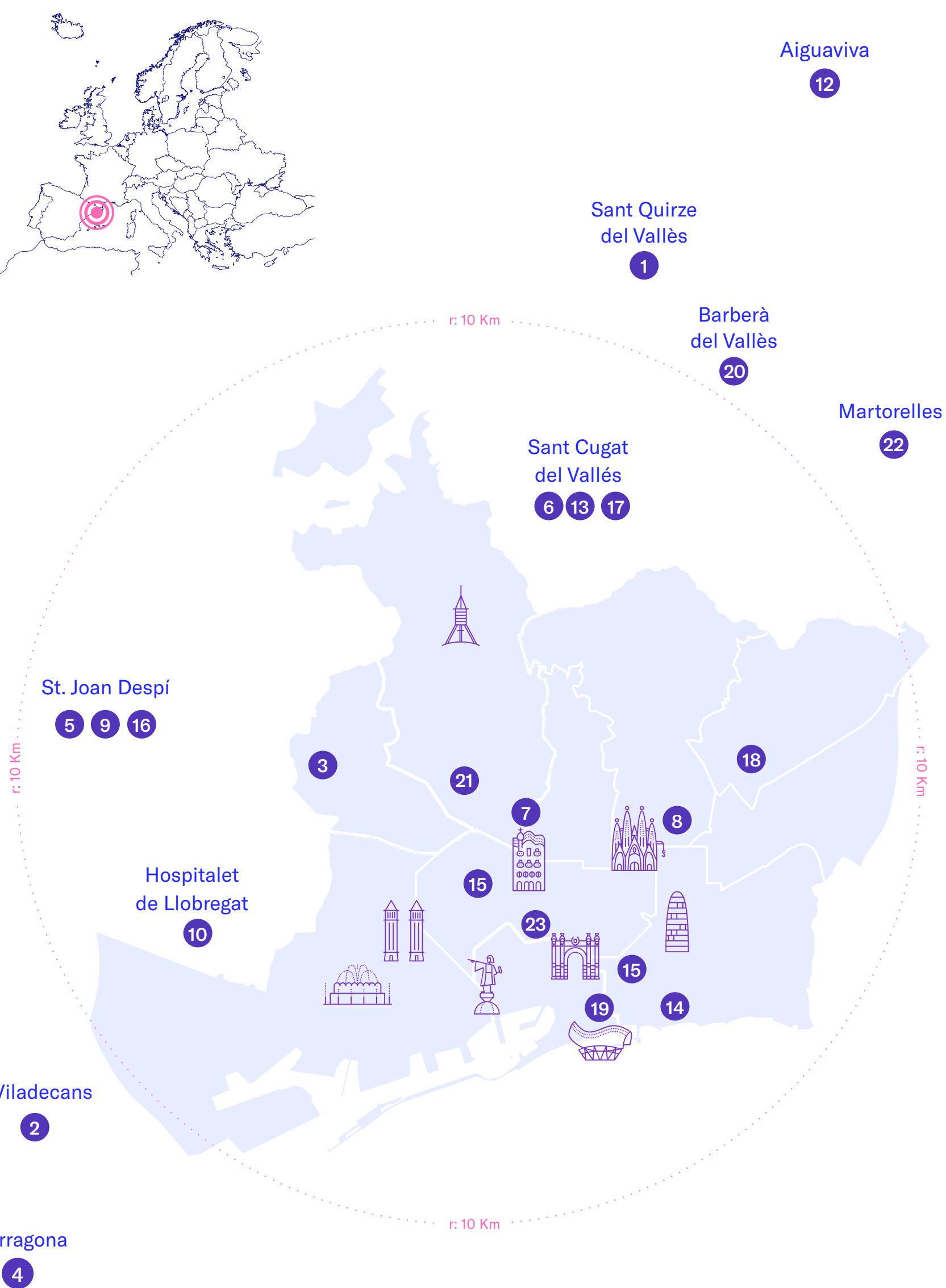
Total researchers in life sciences and healthcare research centres* (2023)



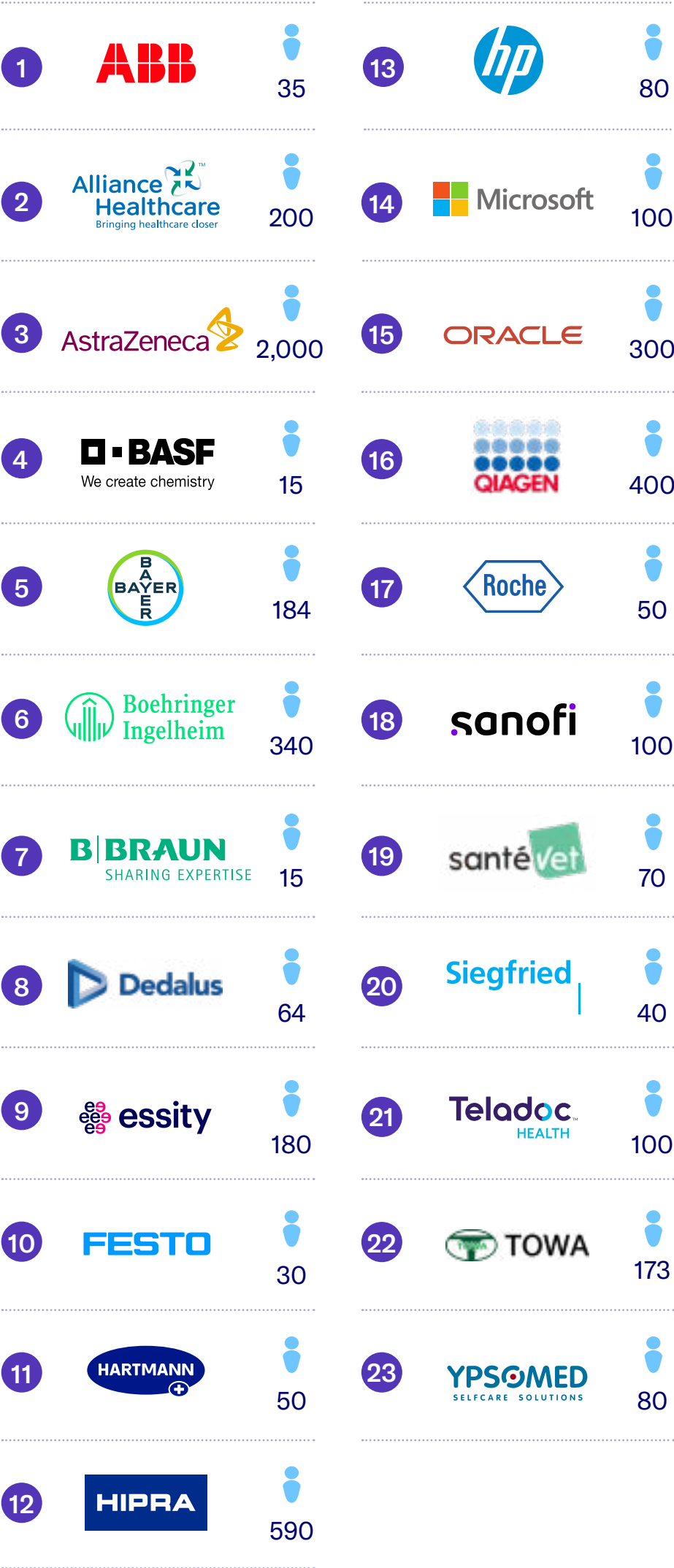
% women

Source: UNEIX (2022-2023)
* CERCA and CSIC centres
Note: the scientific fields of science include all science, health science and engineering studies.

Attraction of digital hubs and centres of excellence in health or with applications in the sector (2020-2024)



New jobs created/announced: +5,000



Sources: ACCIÓ and Biocat

A good rate of startup creation and low mortality rate

The rate of company creation has remained stable over the past 10 years, as shown in this graph, which details the number of new startups by the subsector to which they belong, differentiating whether they stemmed from a university or a research centre (spinoffs).

Between 2015 and 2024, 582 startups* were founded, mostly in digital health (207, 36%), followed by biotech (171, 29%) and medtech (88, 15%). Of these new startups, spinoffs were of note for their key role in transferring scientific and technological knowledge to the market and to patients. In this subsegment, 131 companies** (22% of the total) were created, representing between 14% and 27% of the overall number, depending on the year. This global picture includes a relevant fact: the mortality rate of startups and spinoffs over these years came to 157 companies, or 27% of the total number of startups and spinoffs created in the period, mainly due to the termination of digital health startups, which represented 43% of the total number of those that ceased operating.

% startups founded or run by women ↘

27%

2015-2019

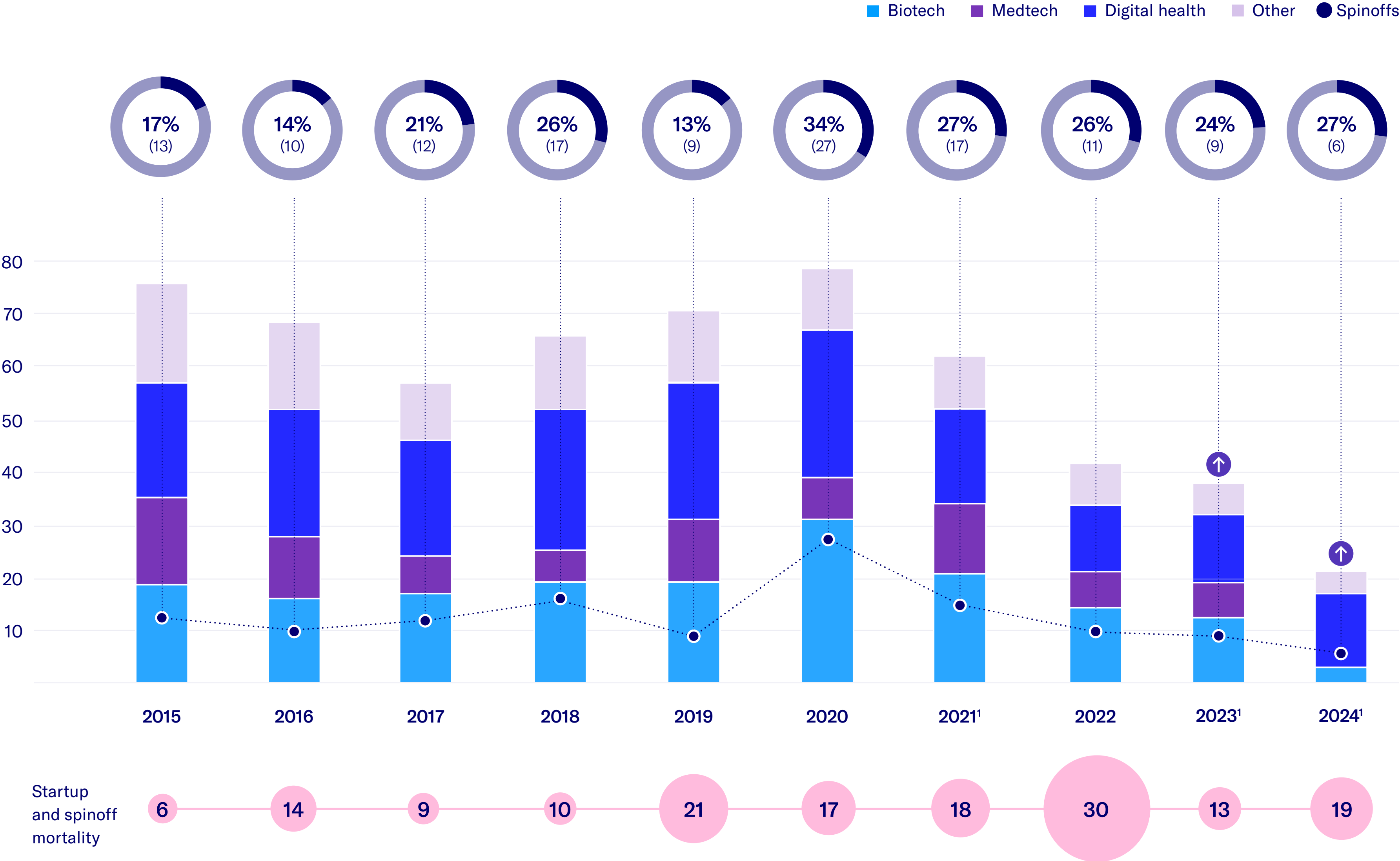
31%

2020-2024

* Of which 470 were active in 2024

** Of which 112 remained active in 2024

Company creation (startups and spinoffs) in the BioRegion (2015-2024)



Source: Biocat

¹ The process of detecting new company activity does not stabilise until two years later; therefore, the 2023-2024 indicator will stabilise in future editions of the Report.

Technology transfer from research centres (2020-2024)

Continuing on from the analysis initiated with the 2022 Report, transfer activity from research centres in the past 5 years is presented using two indicators: number of spinoffs created between 2020 and 2024 in relation to average annual budget allocated to research (see right) and revenues generated by commercialisation of the research results (table below). The study is complemented by the investment made by spinoffs during this period, which came in north of €220 M and where the VHIR and the IRB stand out in number of companies and volume of investment obtained. On the other hand, the centres had a total operating income of more than €16.5 M, largely due to the activity developed at the CRG.

The strategic priorities of each centre determined their position in these indicators.

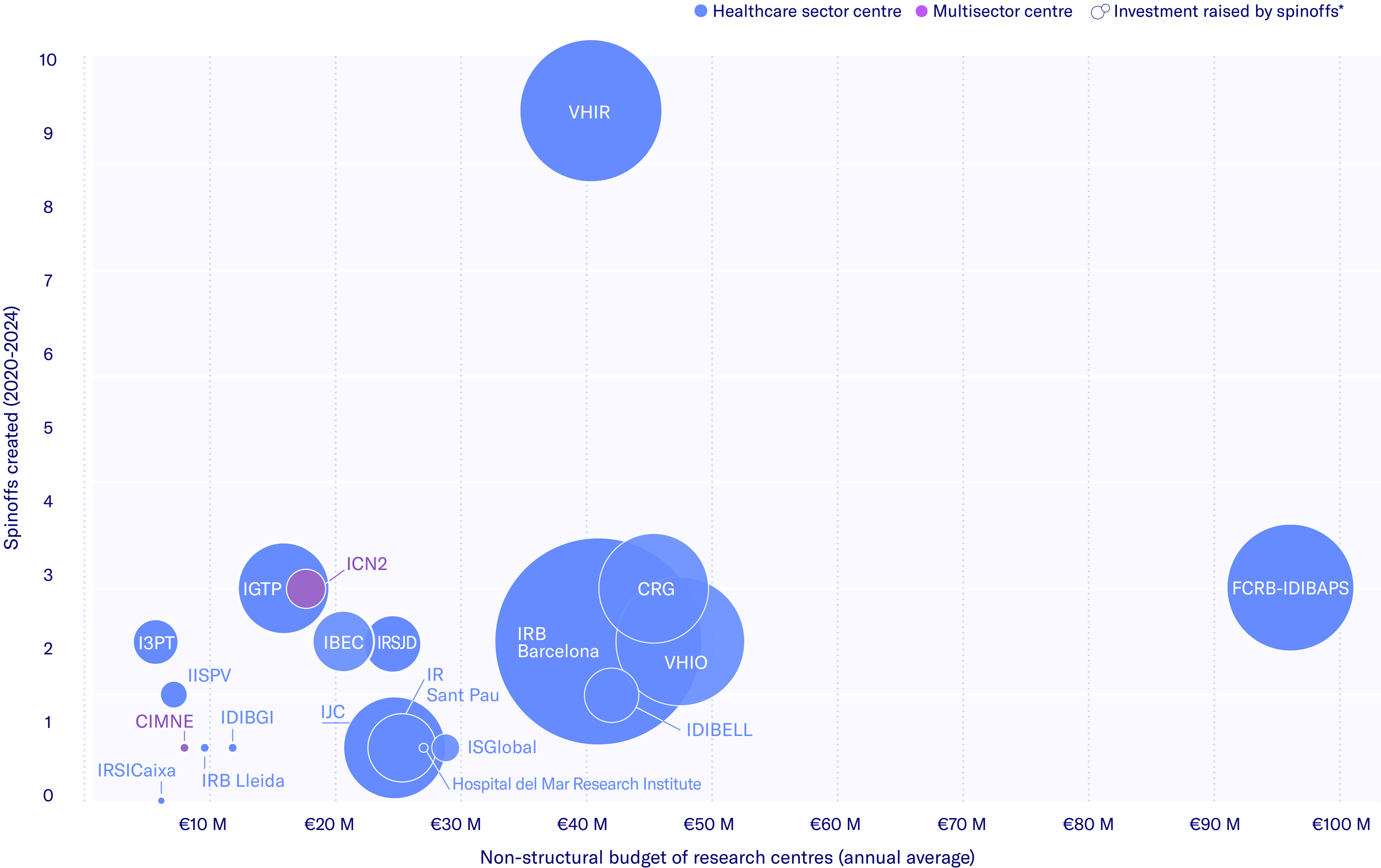
Top 10 revenues from commercialisation by research centres (2020-2023)

CRG	€4,119,922
ICN2	€1,813,623
VHIR	€1,463,116
FCRB-IDIBAPS	€1,144,043
VHIO	€925,578
IDIBELL	€670,857
IJC	€536,401
IR Sant Pau	€415,992
IRB Barcelona	€337,010
IRSJD	€255,882

Top 10 investments raised by spinoffs (2020-2024)

IRB Barcelona	€68.3 M
VHIR	€32.2 M
VHIO	€26.6 M
CRG	€19.0 M
IJC	€16.6 M
IGTP	€13.5 M
FCRB-IDIBAPS	€12.4 M
IR Sant Pau	€7.3 M
IBEC	€6.0 M
IRSJD	€5.6 M

Technology transfer from research centres in terms of spinoffs (2020-2024)



*The size of the entities represented indicates the investment made by the spinoffs (see table on the left).
Sources: Biocat and CERCA

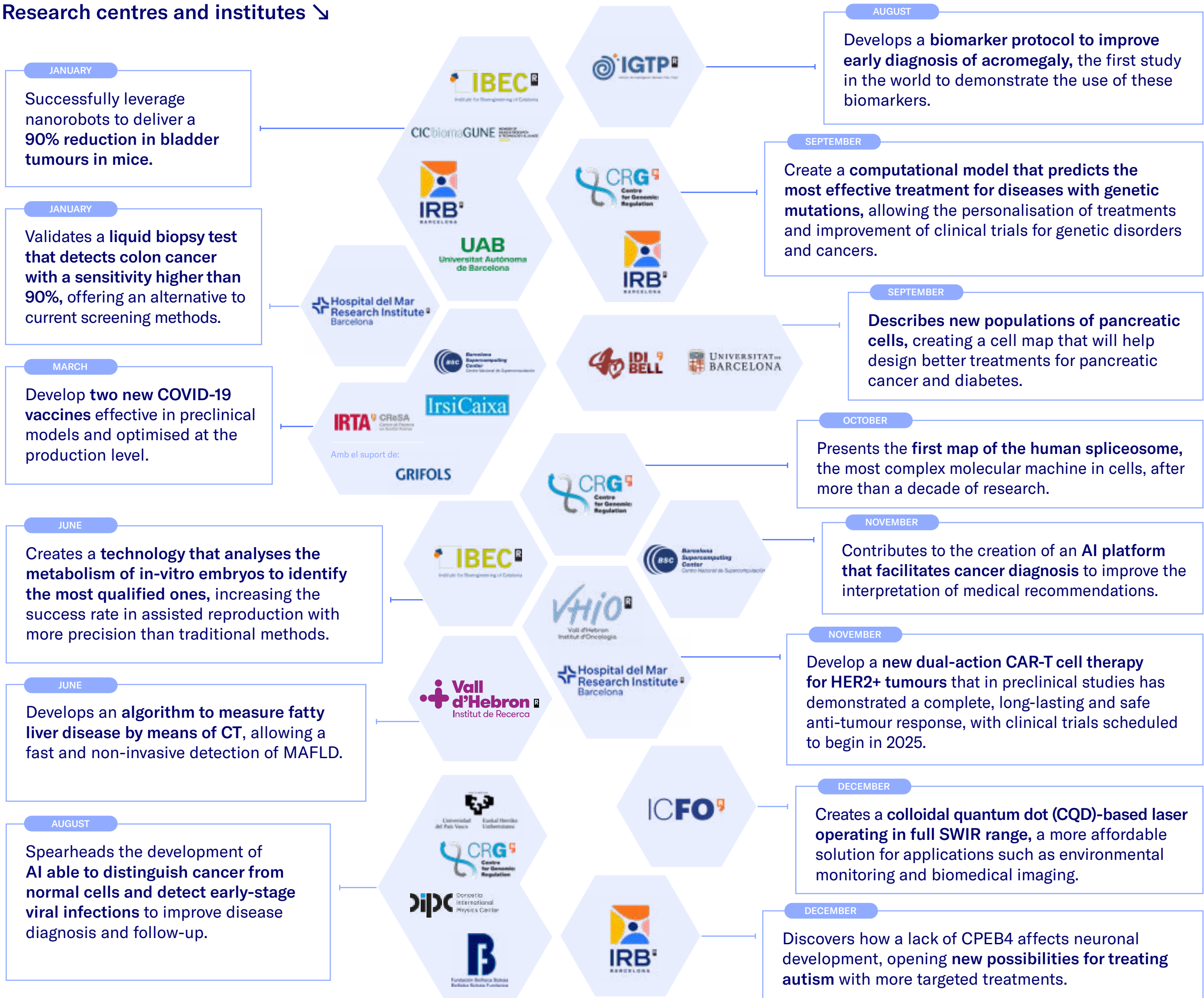
Key initiatives and new infrastructures promoted in the BioRegion (2024)

■ Initiative of the Administration ■ Infrastructure

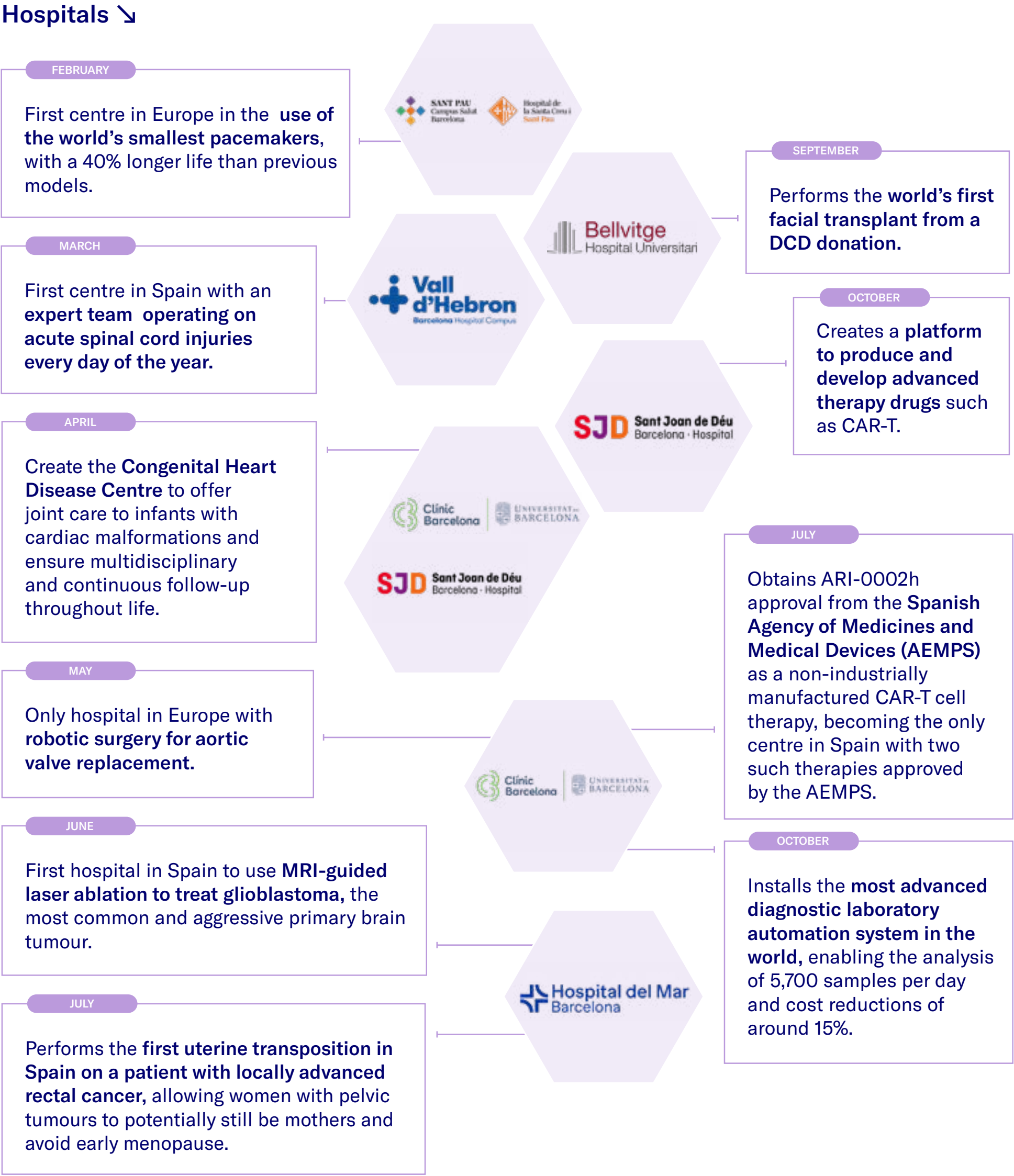


Moving forward in science, medicine and care services from Catalonia (2024)

Research centres and institutes



Hospitals



2 Investment and funding in startups and scaleups

Photograph: BIO-Europe Spring 2024 (Barcelona)



New record for venture capital investment in startups and scaleups

2024 marked a new record in funding for startups and scaleups in the BioRegion, with 347 million euros, an increase of 54% over the previous year. This figure is the second highest in BioRegion history, only surpassed by that of 2022. As shown in the graph, 80% of the 347 million euros came from venture capital, which contributed 277.9 million euros through 38 investment rounds. Of these, three large transactions accounted for about 70% of the total: Impress, with a second megaround of 110 million euros; INBRAIN Neuroelectronics, with 46.2 million euros; and the biotech Heura, with 40 million euros. Once again, we would highlight the importance of European competitive grants which, comprising more than 55 million euros, are a key instrument in scaling up entrepreneurial projects.

Internationally, there have been signs of investment recovery in the United States and Europe, a trend that experts predict will be consolidated during 2025.

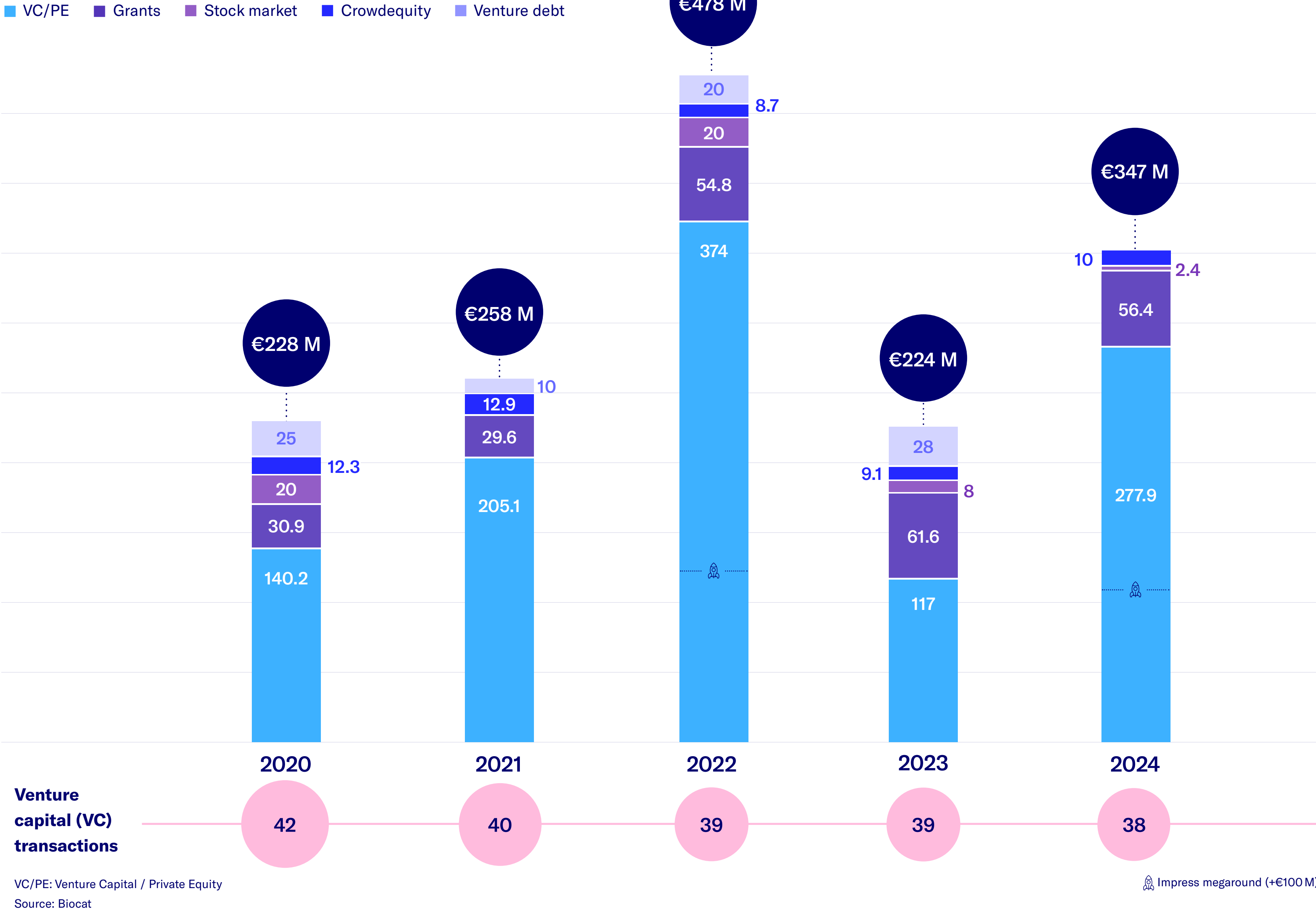
International comparison: year-on-year investment evolution (%) ↘

Regions	2020	2021	2022	2023	2024
Catalonia	⬆ 86%	⬆ 13%	⬆ 85%	⬇ -53%	⬆ 54%
Europe	⬆ 123%	⬆ 38%	⬇ -44%	⬇ -24%	⬇ -3%
North America	⬆ 101%	⬆ 37%	⬇ -32%	⬇ -29%	⬆ 5%
Asia	⬆ 64%	⬆ 41%	⬇ -37%	⬇ -37%	⬇ -38%

Sources: Biocat and Dealroom

Note: the representation on the right includes capital raised by startups and scaleups in Catalonia in the biopharma, medtech, digital health and R&D services sectors. It also includes investment in startups working for the life sciences sector, such as suppliers and engineering and professional service companies.

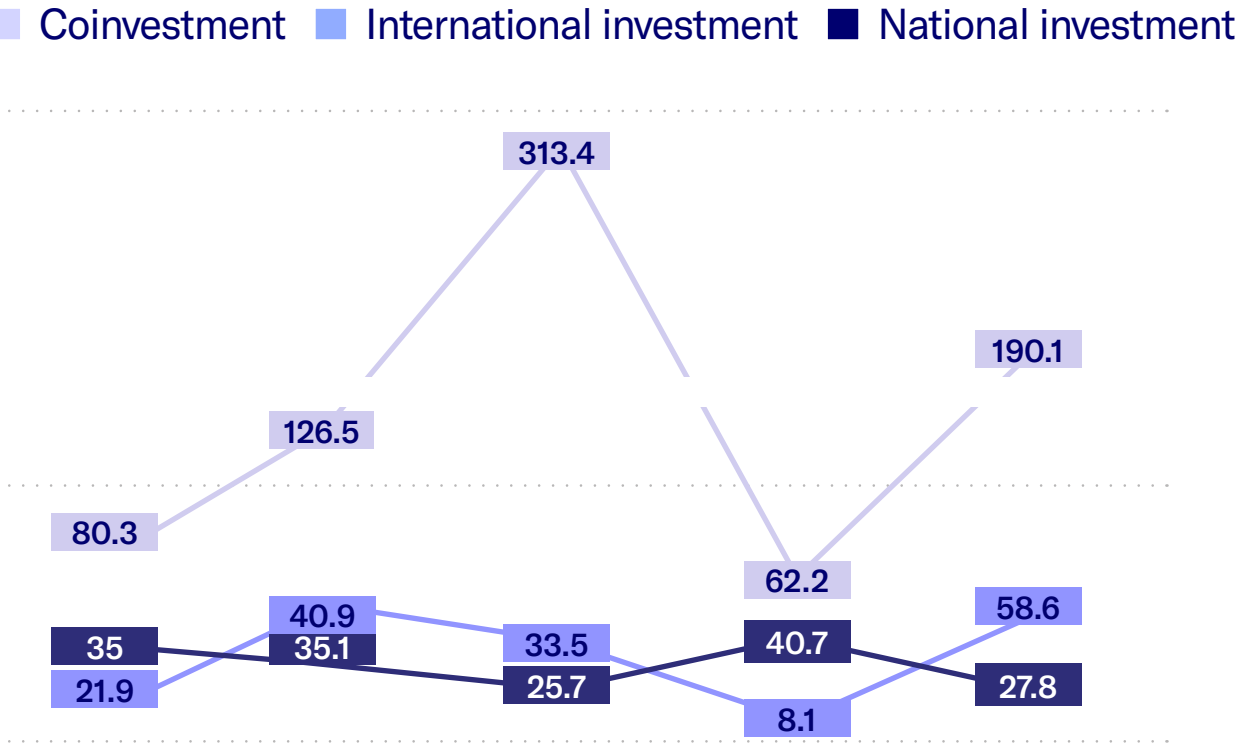
Investment in startups and scaleups in the BioRegion (€M) (2020-2024)



75% of the venture capital involves international investment participation

The interest shown by international VC in startups and scaleups in the ecosystem recovered strongly in 2024 (see figure below) and drove significant growth in biotech and medtech. In fact, **venture capital raised in syndicated rounds multiplied by 3.3 compared to 2023**, and **one-off international capital multiplied by 5**, thanks to investments in large rounds such as Impress, Heura and Novameat. By contrast, investment in **digital health decreased significantly**, in line with the trend observed internationally.

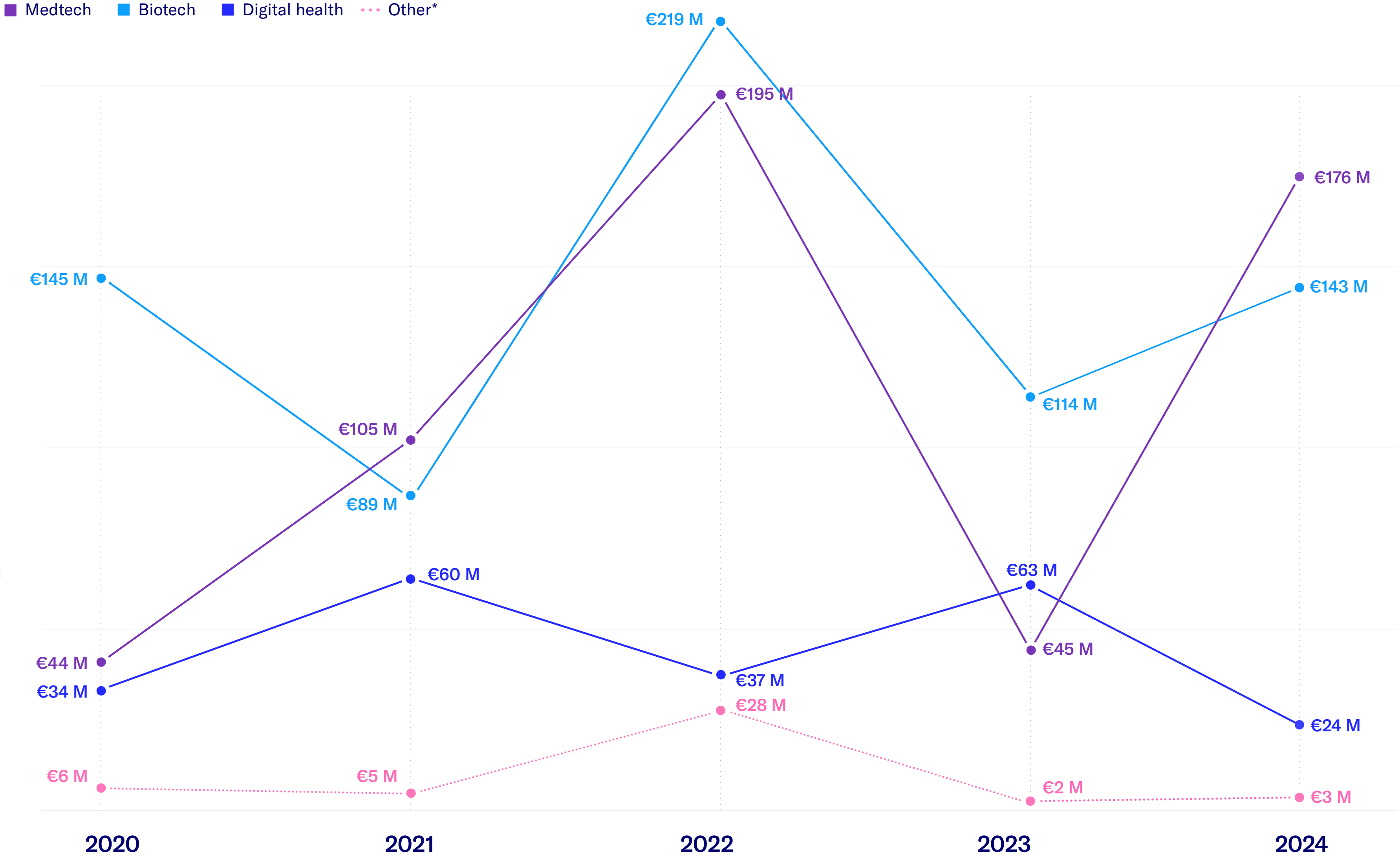
Evolution of investment in VC (€M) (2020-2024) ↴



Source: Biocat

Note: total VC investment is the sum of the 3 represented categories and additional investment rounds where the origin of the VC is unspecified.

Investment in the BioRegion by subsector (€M) (2020-2024)



* Other: professional service companies and suppliers.

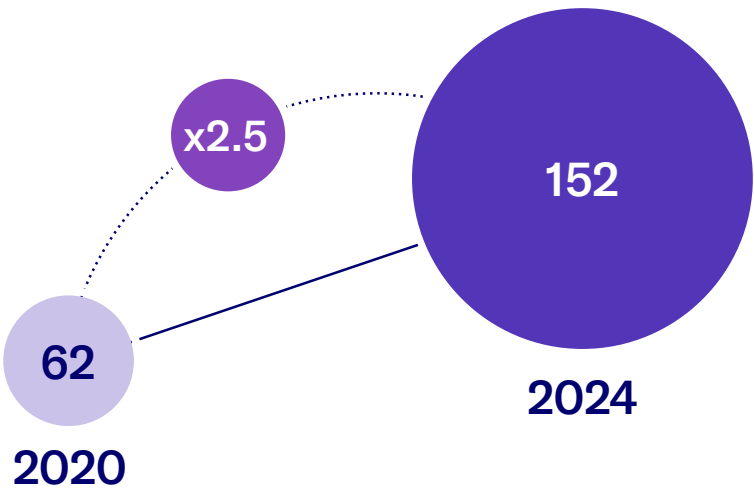
Source: Biocat

Note: investment in biotech includes companies providing therapies, R&D services and other companies with an impact on human health.

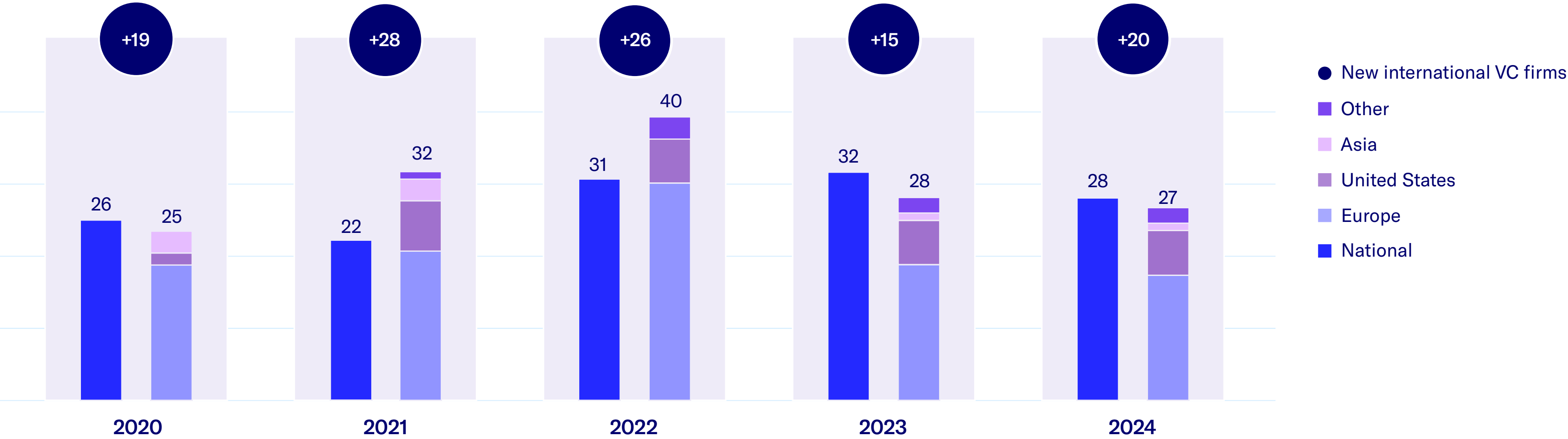
108 new international VC firms have invested in the BioRegion in the past 5 years

After presenting the investment volumes and interest of private equity managers by project type, we look at who is behind the transactions and investment decisions. As the graph shows, the number of national and international firms has held steady over the past five years. National firms continue to be very active and in 2024 spearheaded 22 transactions. Of note was the entry of international capital, bringing the number of foreign firms to 152 to date (108 in the past 5 years), mainly from Europe and the US. They often played a key role in closing major transactions. Either through investors established in Barcelona with whom they coinvested (11 transactions in the year) or independently, large firms such as Forbion, Sofinnova and Wellington, among many others, supported the talent, science and technology developed in Catalonia.

Number of international firms that have participated in investment rounds in the BioRegion



Number of national and international investment firms investing in the BioRegion of Catalonia

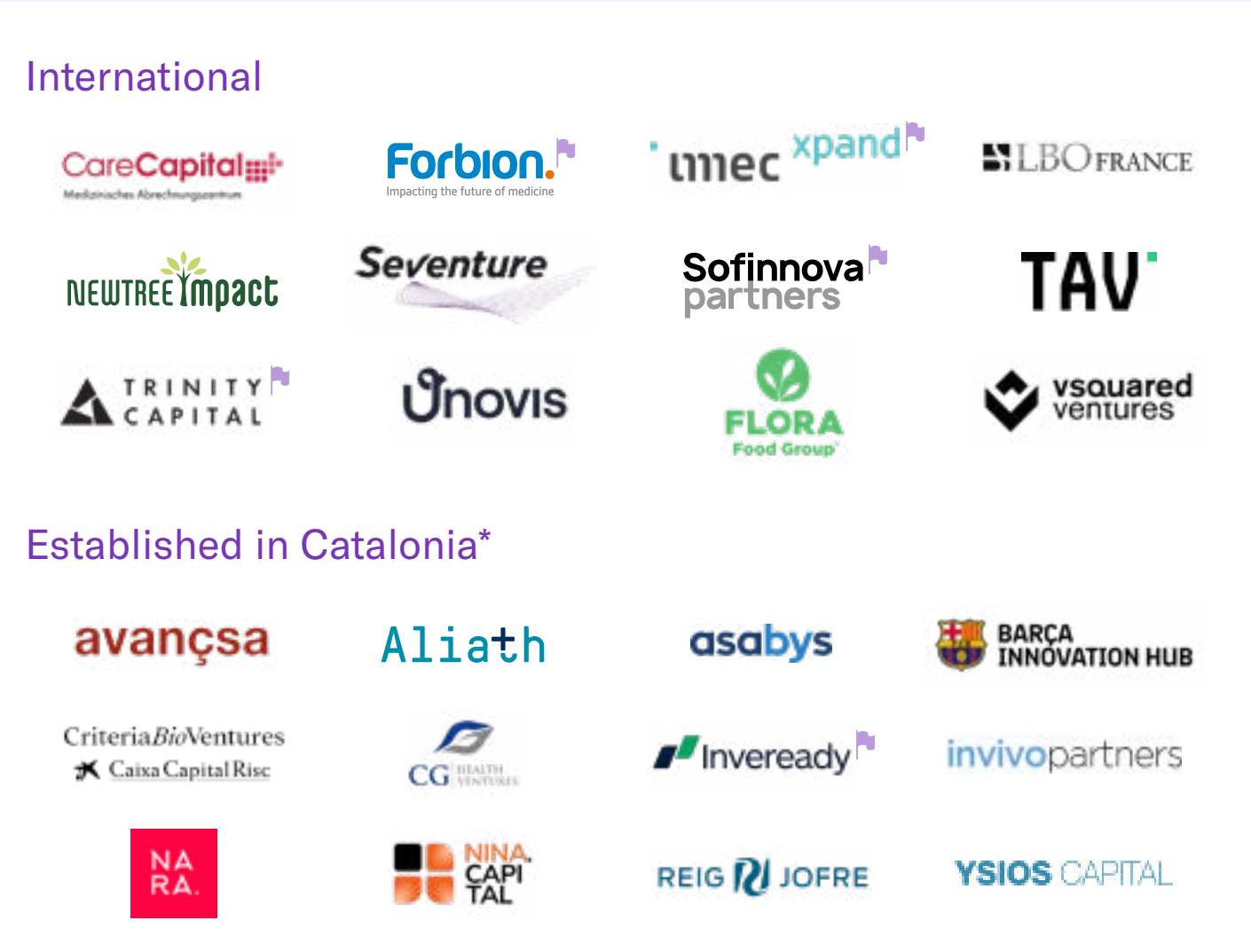


Note: includes the different investment firms (VC and CVC) investing in the BioRegion each year. Each investor is counted only once per year.

Most active international investors (2013-2023)



Most active investors 2024



Leading investors

* Shows the investment firms that have invested in startups established in Catalonia (transactions +€3M) or main dedicated health VCs in the BioRegion.

Source: Biocat

Increase in volume of investment rounds, number of exits and M&A activity

2024 was distinguished by four series A, B and C rounds that stood out among the recorded transactions: the Impress dental-health medtech megaround (€110 M), the INBRAIN Neuroelectronics neurotechnology medtech round (€46 M) and the food health biotechs Heura (€40 M) and Novameat rounds (€17.5 M). The number of exits rose to 11 and, in the same line, there was an increase in M&A activity, with Palex Medical the main player once again, with four new acquisitions.

Mergers and acquisitions (M&A) in the BioRegion 2024

Acquirer ^{CAT}	Target	Acquirer	Target ^{CAT}
cuideo	Dpen-D ^{ES}	aegon ^{NL}	ClinicPoint ^{IT}
ESTEVE	HRAPharma ^{FR}	Austell ^{ZA}	noventure
ISDIN	balene ^{ES}	Calibre Scientific ^{US}	Calibre Scientific
mediktor	SENSELY ^{US}	CURIUM ^{FR}	IRAB ^{Central de Regulació d'Innovació de Catalunya}
Miura Partners	htba ^{CAT}	GILEAD ^{US}	AELIX [*]
Palex	DUOMED ^{BE}	relyens ^{FR}	amalfi analytics
	MC Medical ^{PT}	LABOMAR ^{IT}	EN TO HA LABORATORIOS
	Izasa Medical ^{CAT}	Luminova ^{GT}	Laboratorios Serra Pamies
	Izasa Scientific ^{CAT}	reptodent ^{FR}	inibsa
Uriach	Panacea ^{DE}		
	Bebegel ^{PT}		

^{CAT} Catalonia
* Sale of the company's main asset.
Source: Biocat

Investment rounds and exits of the startups and scaleups in the BioRegion of Catalonia (2022-2024)

	2022	2023	2024
Exits	<div><div>Abamed Pharma</div><div>LABIANA ^{1 2}</div><div>MOLOMICS</div><div>ALIFARM</div><div>MICROPTIC</div><div>Vesismín Health</div><div>Galenicium</div><div>mimetis</div><div>výtrus biotech ¹</div></div>	<div><div>inke</div><div>PECTUS</div><div>MAYMO</div><div>TRAMONTANE TX</div><div>MEDICALMIX</div><div>XRHealth</div></div>	<div><div>Calibre Scientific</div><div>Izasa Medical</div><div>IRAB</div><div>AELIX</div><div>Izasa Scientific</div><div>Laboratorios Serra Pamies</div><div>amalfi analytics</div><div>EN TO HA LABORATORIOS</div><div>noventure</div><div>ClinicPoint</div><div>inibsa</div></div>
€100-250 M	<div><div>Impress</div></div>		<div><div>Impress</div></div>
€40-100 M	<div><div>minorix</div><div>SPLICEBIO</div></div>		<div><div>INBRAIN NEUROELECTRONICS</div></div>
€15-40 M	<div><div>deepull</div><div>heura</div><div>sequera</div><div>INBRAIN NEUROELECTRONICS</div></div>	<div><div>INBRAIN NEUROELECTRONICS</div><div>Qida</div><div>SOM</div></div>	<div><div>heura</div><div>NOVA MEAT</div></div>
€4-15 M	<div><div>PANGAEA</div><div>XRHealth</div><div>timeisbrain</div><div>NOVA MEAT</div><div>PEPTOMYC</div><div>kriba</div><div>MEDSIR</div><div>ELEM</div><div>Durcal</div><div>Olistic</div><div>oliva</div><div>cuideo</div></div>	<div><div>NUAGE</div><div>PEPTOMYC</div><div>ADMIT</div><div>deepull</div><div>IOMED</div><div>TOPDOCTORS</div><div>oliva</div><div>MIMVRK</div><div>OneChain</div><div>KORIKINE</div></div>	<div><div>Integra therapeutics</div><div>REVEAL GENOMICS</div><div>Biointaxis</div><div>SEQUENTIA</div><div>GENOMCORE</div><div>AbilityPharma</div><div>WIVI</div></div>
€1-4 M	<div><div>NANOLIGENT</div><div>abzu</div><div>oxolife</div><div>innerva</div><div>DyCare</div><div>miwendo</div><div>AbilityPharma</div><div>mediQuo</div><div>GATE2BRAIN</div><div>BYTC</div><div>výtrus biotech</div><div>loop</div><div>MADEOFGENES</div><div>BEYOND YOU</div><div>OneChain</div><div>telomere therapeutics</div><div>Pulmobiotics</div><div>Methinks</div><div>able</div><div>Integra therapeutics</div><div>Bioo</div><div>Floxxaics</div><div>DEVICES</div></div>	<div><div>NIMBLE</div><div>EL</div><div>vitaance</div><div>ALLO</div><div>AROMICS</div><div>afirma</div><div>ZYMOVOL</div><div>Gene</div><div>KAMLEON</div><div>heura</div><div>Integra therapeutics</div><div>accXible</div><div>MatchTrial</div><div>ona</div><div>omniscope</div><div>FreeUX</div><div>mediQuo</div><div>EndoLipid</div><div>CUANTUM</div><div>CORNEA</div><div>renalyse</div><div>MANINA MEDTECH</div><div>GATBIO</div><div>acceXible</div><div>ona</div><div>Pharmacelera</div><div>mediquo</div><div>tensormedical</div></div>	<div><div>BIORCE</div><div>Gyala</div><div>Hemostatics</div><div>able</div><div>ALLO</div><div>GENE VECTOR</div><div>idp pharma</div><div>Social Diabetes</div><div>NANOBOOTS THERAPEUTICS</div><div>BiteRight</div><div>cebiotex</div><div>Livo</div><div>ONIRIA</div><div>Brain gaze</div><div>Theriva</div><div>Ona</div><div>AHEAD THERAPEUTICS</div><div>heecap</div><div>cuideo</div><div>Floxxaics</div><div>afirma</div><div>lumiris</div><div>KINTSUBI THERAPEUTICS</div><div>ONCOHEROES BIOSCIENCES</div><div>fecundis</div><div>MOWOT</div><div>výtrus biotech</div><div>telomere therapeutics</div><div>AIG</div><div>Superlativa</div><div>KORIKINE</div><div>KAMLEON</div></div>

^A Series A
^B Series B
^C Series C
¹ Listed on the BME. ² Company headquartered outside of Catalonia but with main activity in Catalonia.
Source: Biocat
Note: includes private rounds or public grants and presented in order of transaction value. Exit is considered when a company is acquired or undergoes an initial public offering (IPO).

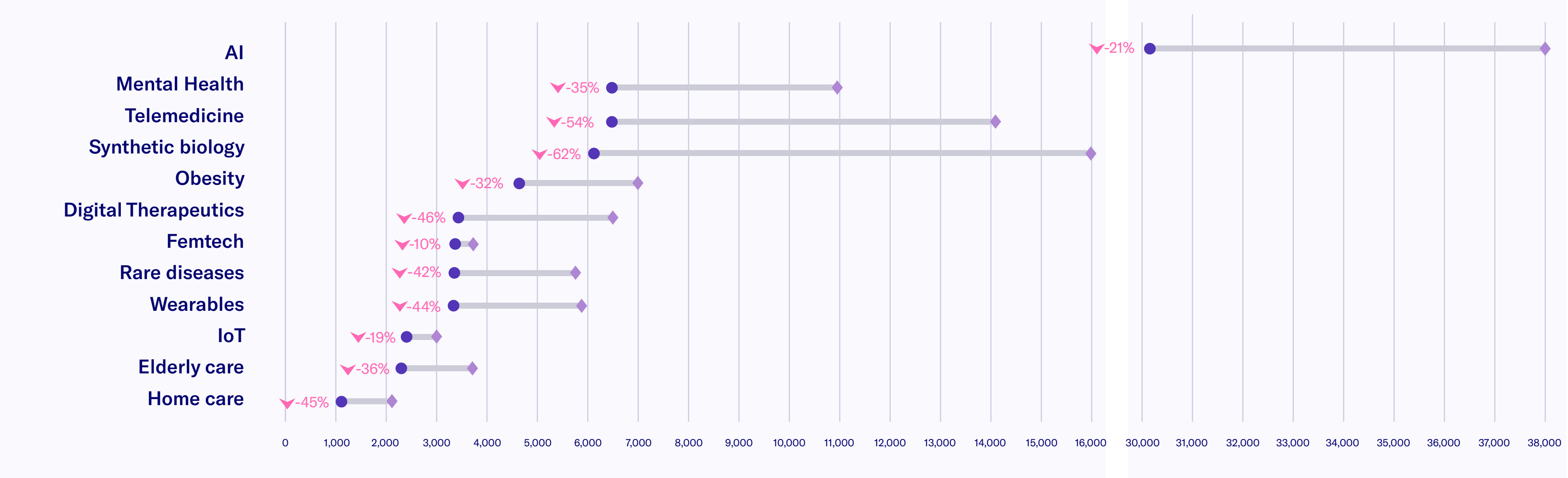
The BioRegion withstands the global slowdown in health investment

International investment in health has undergone significant changes in recent years, with a sharp slowdown across several key areas when comparing the periods 2019-2021 and 2022-2024.

On a global scale, there has been a generalised reduction in investment in most of the areas selected for the study, including artificial intelligence (AI), although it is the number-one area of interest for investors, as can be seen in the volume of investment it generates. Also of note is the sharp drop in obesity, the great white hope of the past two years, which reached investment records previously unmatched in any other indication.

The BioRegion of Catalonia, by contrast, and despite operating at a lower order of magnitude, is not only resisting this slowdown but is increasing its capital attraction in high-added value and growth-potential sectors such as synthetic biology and artificial intelligence (AI). It is also recording a significant increase in investment in home care, senior care, femtech (health technologies for women) and and rare diseases.

Evolution of international investment in health by area of interest (\$M)



Source: Dealroom

Evolution of investment in the BioRegion in health by area of interest (€M)



Source: Biocat

3

Science and technology assets

Photograph: Grifols



Catalonia, 2nd in Horizon projects funding and 5th in ERC Grants in Europe

Catalonia is again consolidating a position as one of the leading scientific centres in Europe, as reflected in the indicators for attracting competitive funding for life science and healthcare projects.

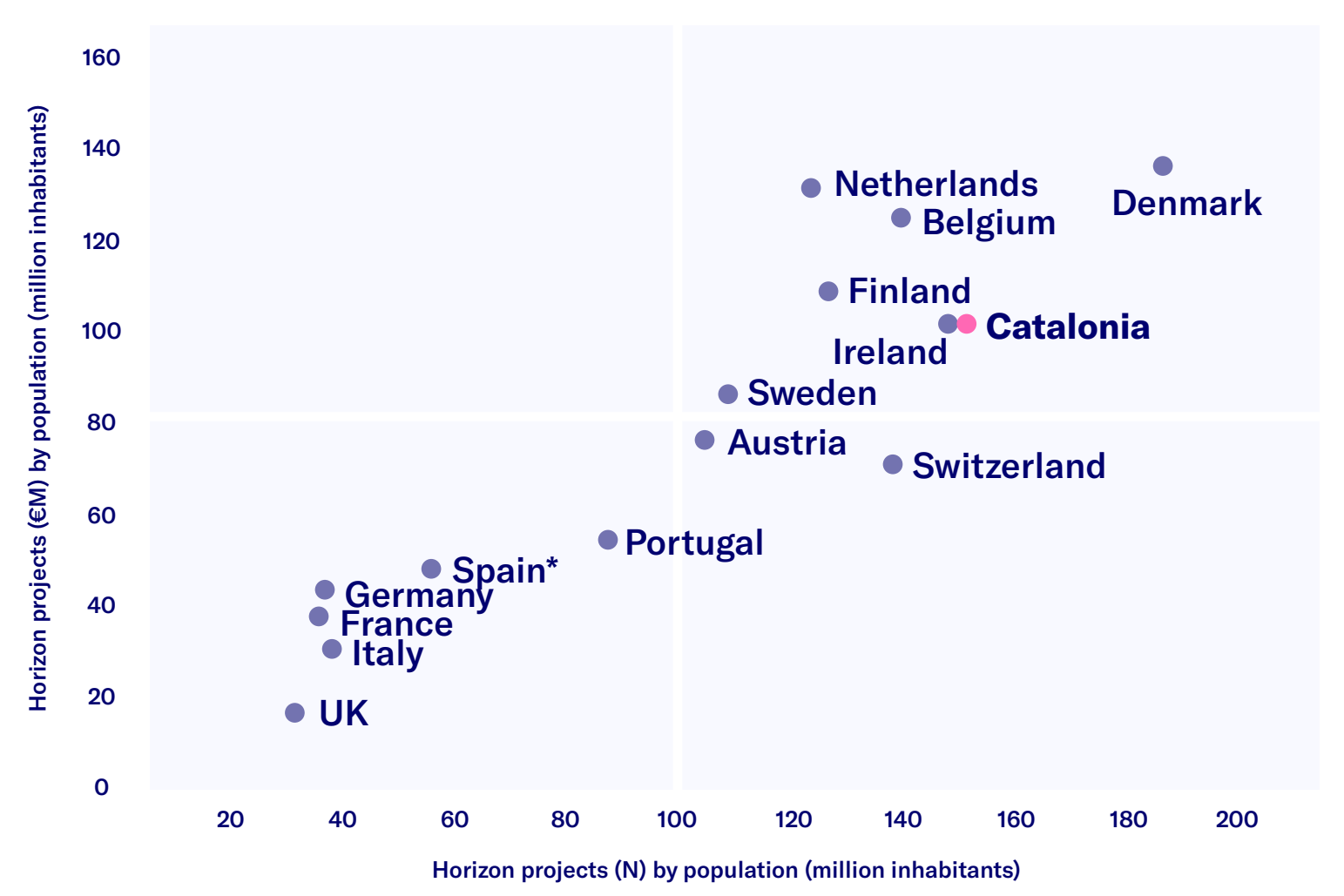
Between 2019 and 2023, 802 million euros in competitive funding was obtained, of which 160 million was from 104 ERC grants¹ through 1,198 projects funded by the Horizon programmes (H2020 and Horizon Europe).

In an analysis weighted by population, Catalonia ranks 2nd in project attraction and 5th in number and funding of ERC grants. In absolute terms, it represents 45% of European research projects and 46% of the ERC grants received in Spain.

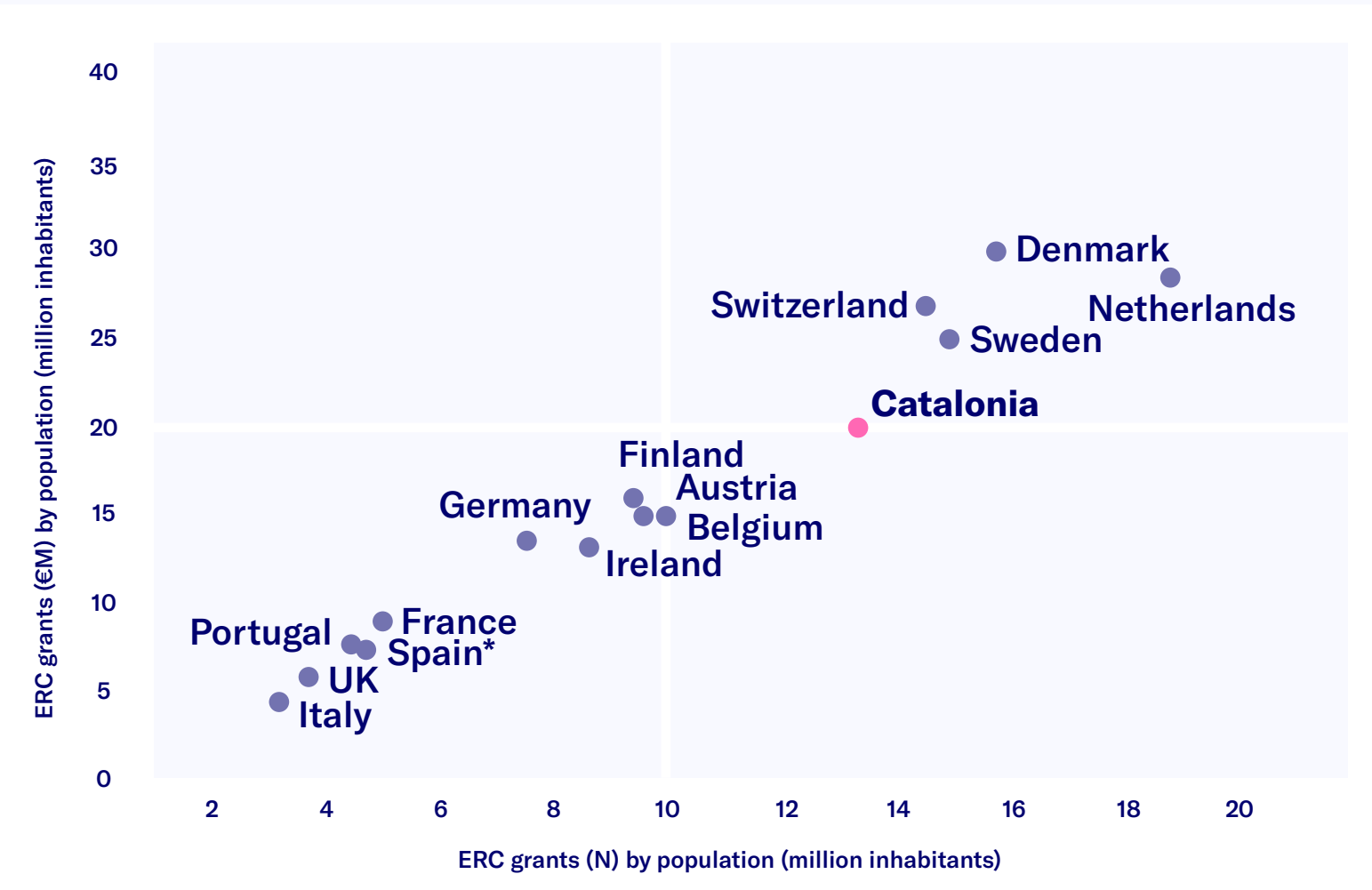
These figures demonstrate the strength of the Catalan research system, driven by a network of leading institutions, a high rate of international collaboration and a constant attraction of high-level scientific talent.

¹ European Research Council (ERC) grants are considered one of the most prestigious sources of funding in Europe as they are awarded exclusively on the basis of scientific excellence.

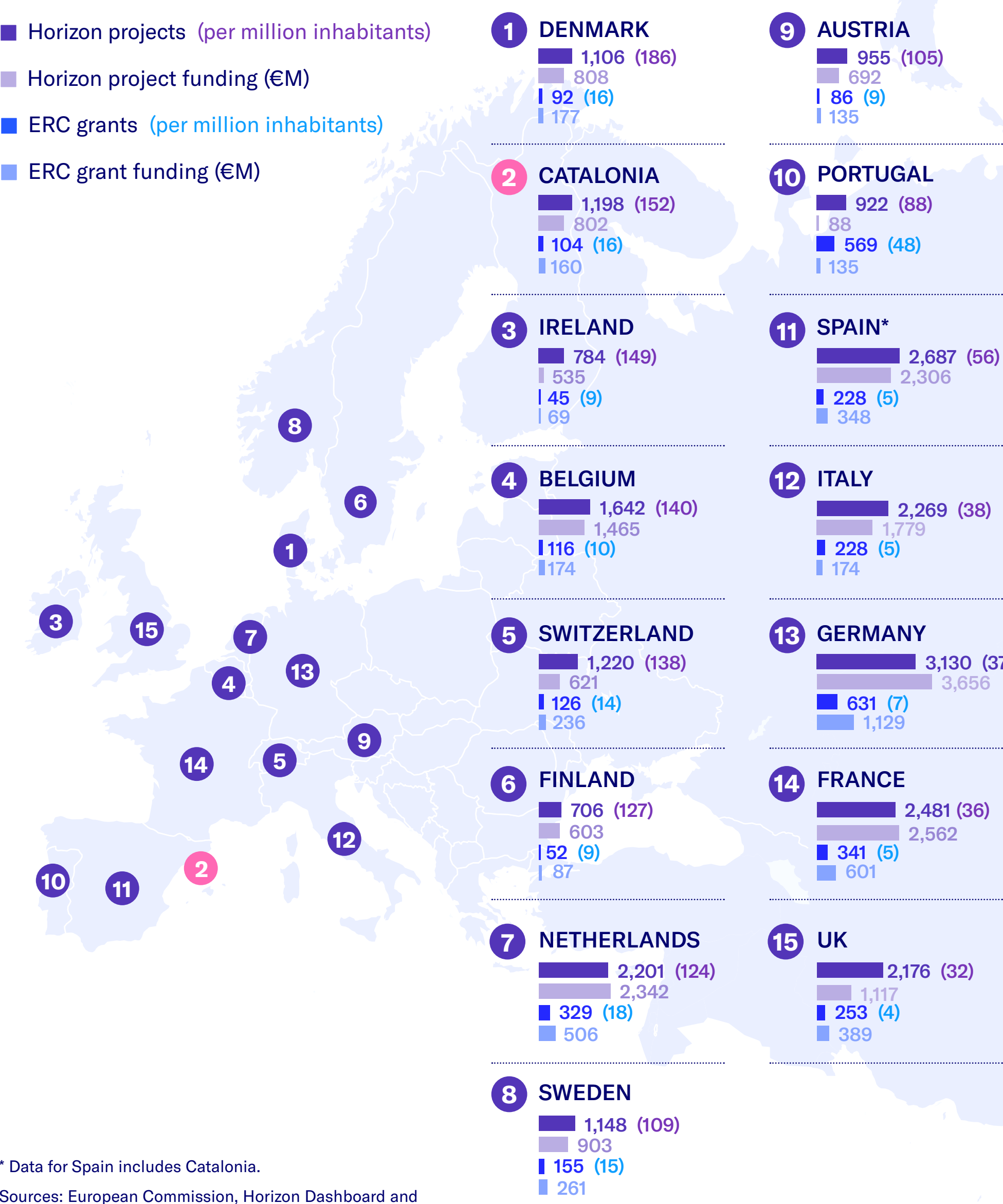
Horizon projects in life sciences and healthcare (2019-2023):
Number and funding (per million inhabitants)



ERC Grants in life sciences and healthcare (2019-2023):
Number and funding (per million inhabitants)



Horizon projects and ERC Grants in life sciences and healthcare (2019-2023) –
Ranking by number of projects (per million inhabitants)



* Data for Spain includes Catalonia.


Sources: European Commission, Horizon Dashboard and Eurostat (July 2024)


Catalonia, 5th in scientific publications and 1st in % of Highly Cited Papers in Europe


The competitiveness that Catalonia demonstrates in attracting European research funds is reinforced by its high-impact scientific production which places it in 1st position in Europe in Highly Cited Papers (per million inhabitants) - with 3.15% of its production in the top 1%- ahead of countries such as Belgium (3.04%), Denmark (2.65%) and Switzerland (2.72%). Specifically, Catalonia has 1,716 HCPs, representing 51.62% of the Spanish total.


With regards total number of publications in life sciences and healthcare between 2019-2023, Catalonia had 54,460 (2019-2023), putting it 5th in Europe in scientific production (per million inhabitants). The counterpoint to the excellence in research continued to be the low number of international patents, where we are in 12th place. Translating high-impact research into innovation and knowledge transfer is a challenge still to be met.


Main research areas (based on HCPs) ↘


Oncology

Internal medicine

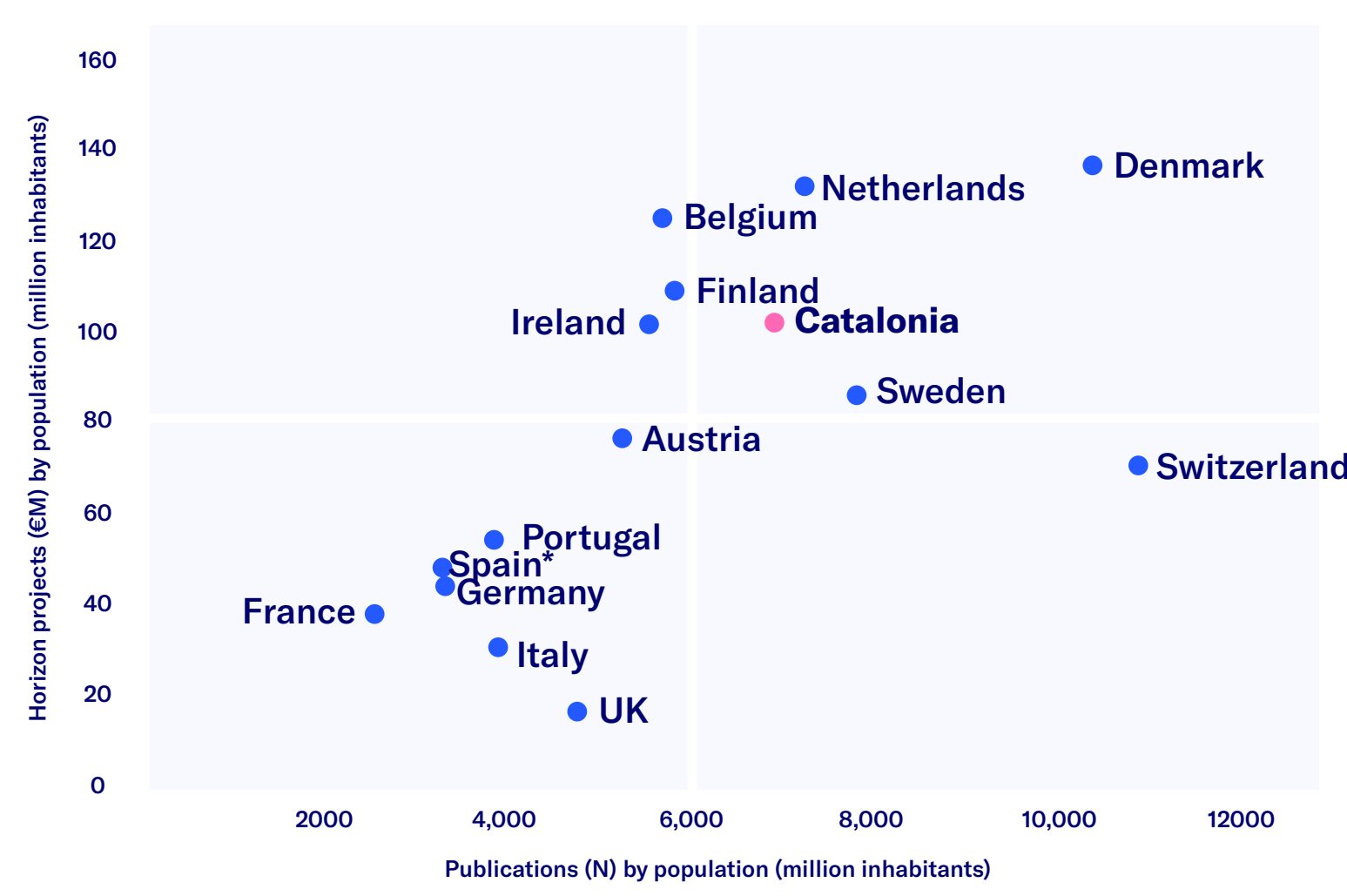
Gastroenterology and hepatology

Clinical neurology

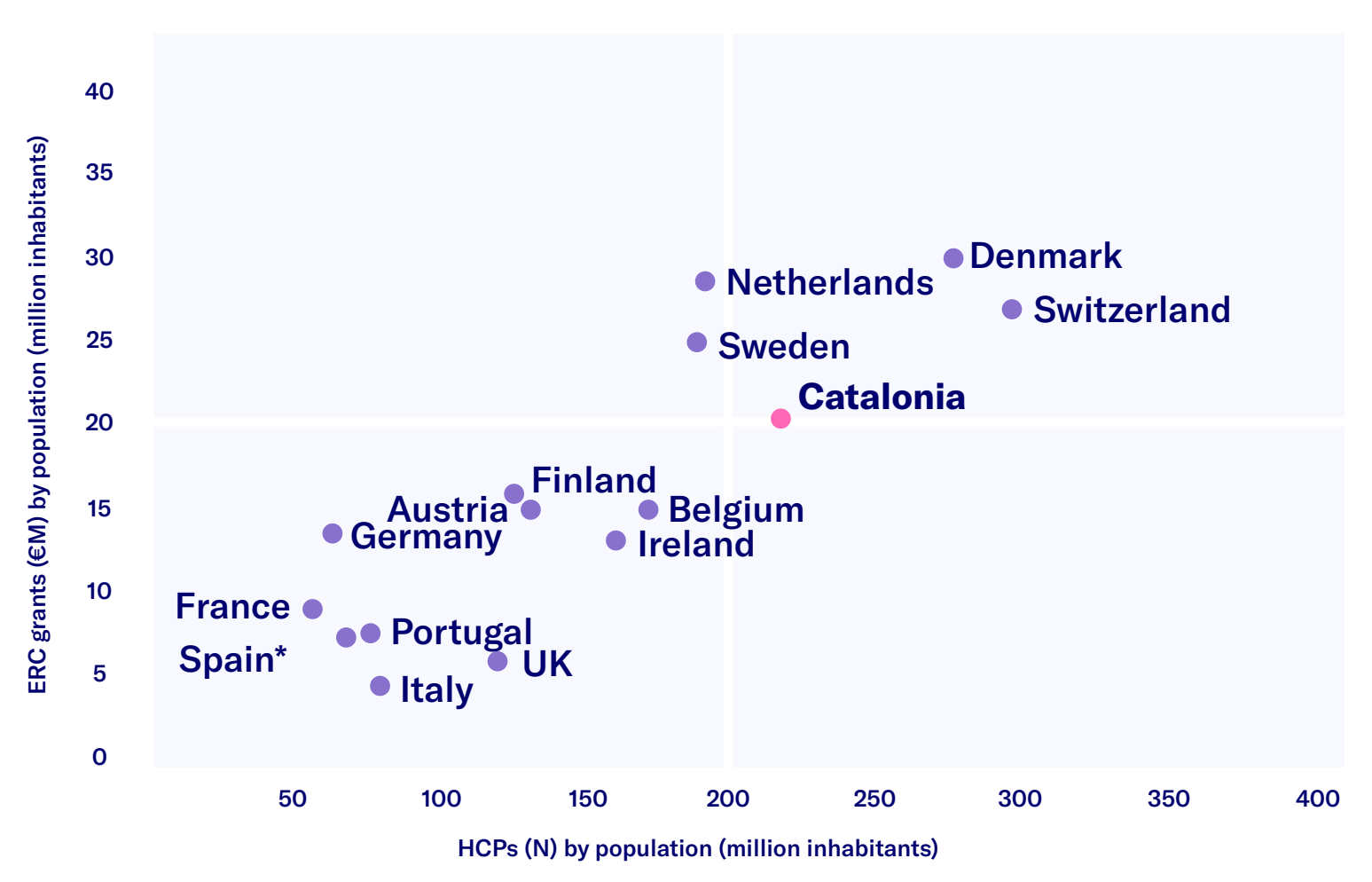
Cardiovascular system

Respiratory system

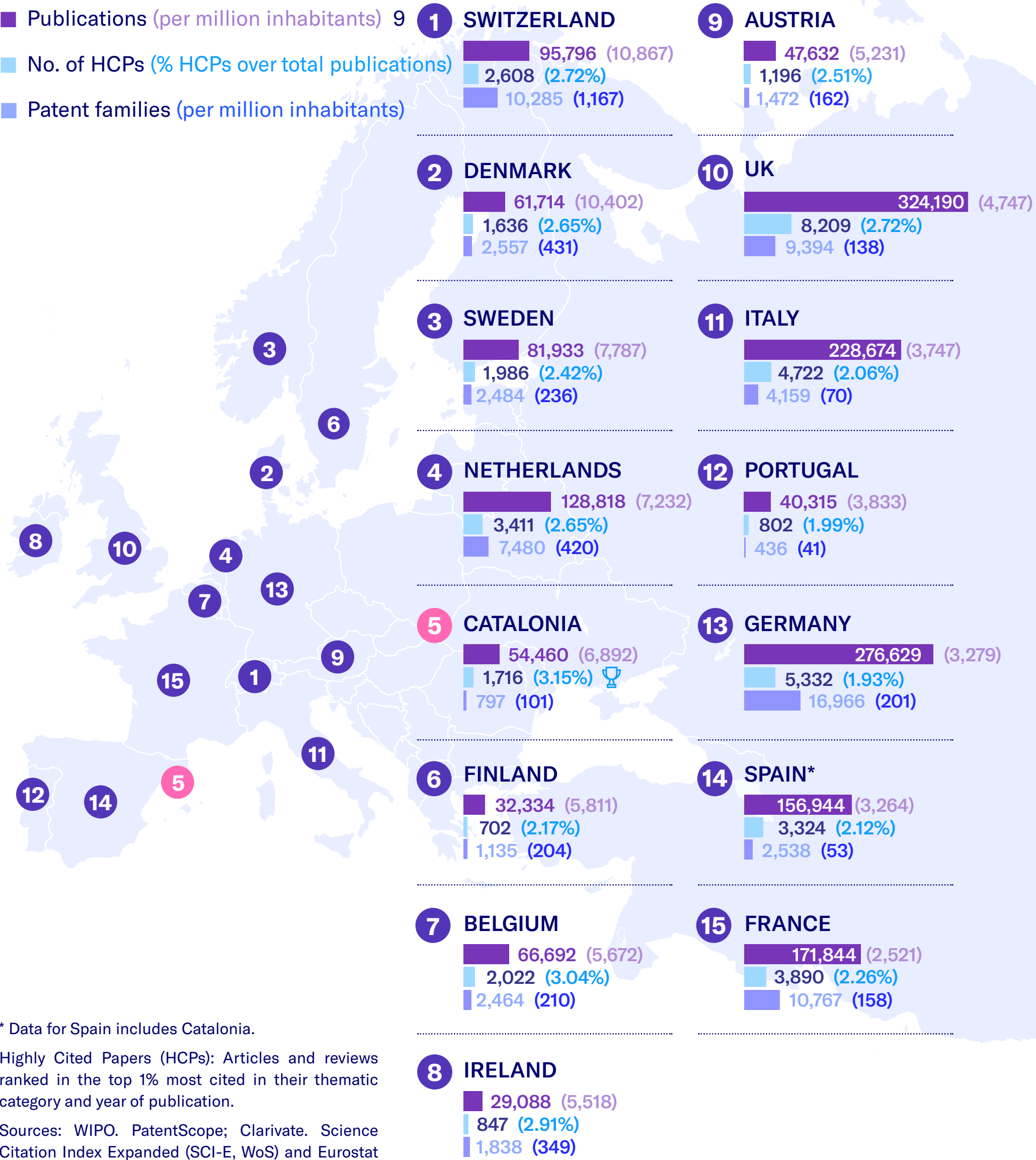
Scientific publications and Horizon projects in life sciences and healthcare (2019-2023): Number and funding (per million inhabitants)



HCPs and ERC Grants in life sciences and healthcare (2019-2023): Number and funding (per million inhabitants)



Scientific publications and international patents in life sciences and healthcare (2019-2023) – Ranking by number of publications (per million inhabitants)



* Data for Spain includes Catalonia.

Highly Cited Papers (HCPs): Articles and reviews ranked in the top 1% most cited in their thematic category and year of publication.

Sources: WIPO. PatentScope; Clarivate. Science Citation Index Expanded (SCI-E, WoS) and Eurostat (July 2024)

Catalonia, 3rd in publications and 3rd in Highly Cited Papers in advanced therapies in Europe

Scientific production in advanced therapies experienced accelerated growth between 2014 and 2023. Catalonia followed this pathway, with growth of nearly 110% over this period. With 2,374 publications (37.55% of the Spanish total) Catalonia came in ahead of countries such as Denmark (1,519), Austria (1,821) and Finland (1,200), demonstrating a high capacity for scientific production in this field. When weighted by population, Catalonia was among the top 3 hubs in scientific production and was the 3rd European region with the highest percentage of HCPs, only surpassed by Sweden and Netherlands. This scientific leadership is driven by a network of highly productive institutions. The University of Barcelona (UB), the Hospital Clínic of Barcelona, the Autonomous University of Barcelona (UAB) and the FCRI-IDIBAPS lead the scientific production in advanced therapies in the BioRegion, showing a strong concentration of high-quality research.

Catalonia maintained a presence in patents above that of Austria (23), Denmark (16) and Finland (14), but there was room for improvement compared to the usual benchmark countries.

Scientific production in advanced therapies by institution (2014-2023)

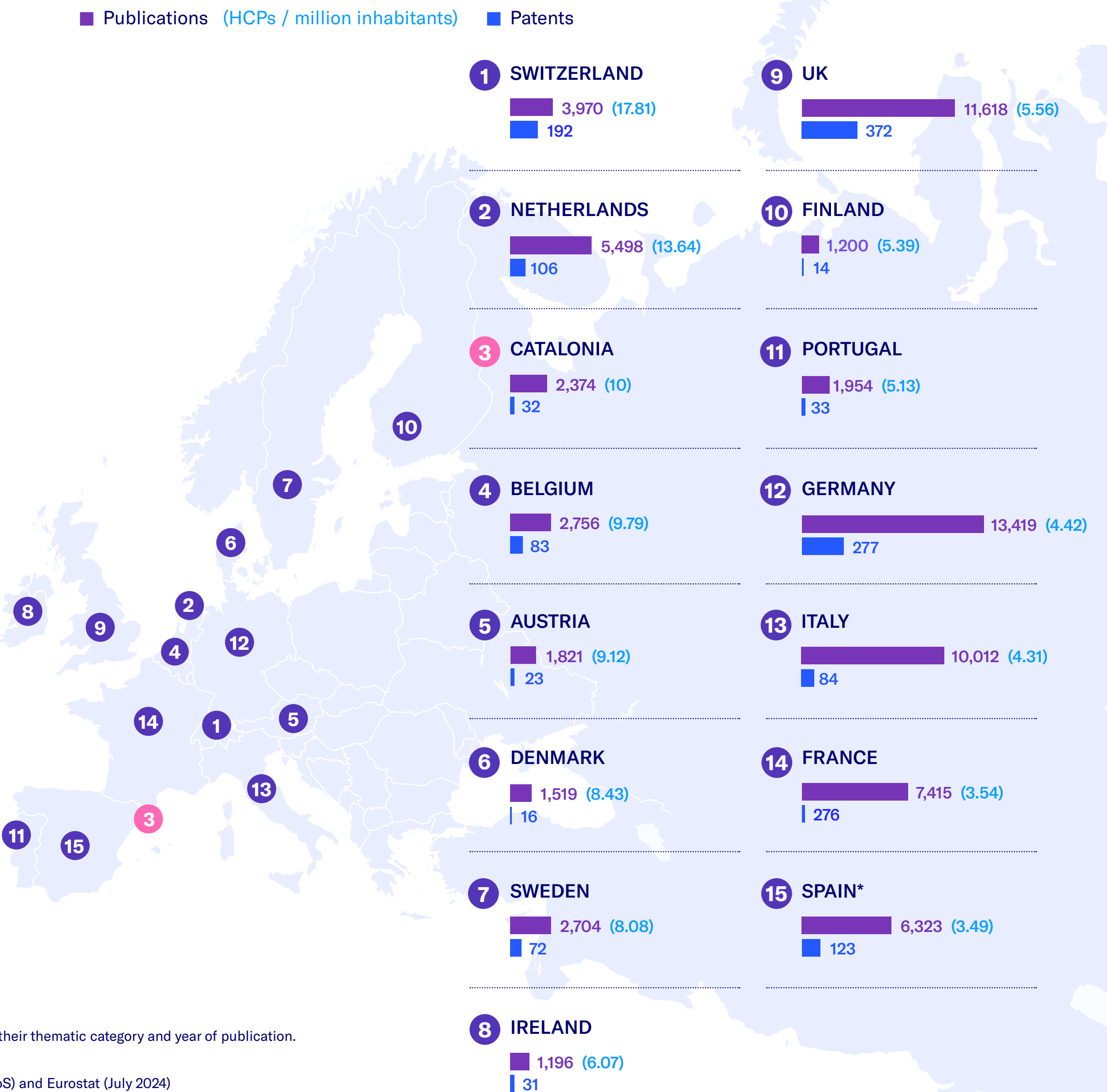
Institution	Publications
University of Barcelona (UB)	1,071
Hospital Clínic of Barcelona	621
Autonomous University of Barcelona (UAB)	578
Barcelona Research Clinic Foundation - August Pi i Sunyer Biomedical Research Institute (IDIBAPS)	415
Vall d’Hebron University Hospital	375
Bellvitge Biomedical Research Institute (IDIBELL)	344
Catalan Institute of Oncology (ICO)	320
Josep Carreras Leukaemia Research Institute (IJC)	268
Barcelona Institute of Science and Technology (BIST)	245
Hospital de la Santa Creu i Sant Pau	239
Catalan Institution for Research and Advanced Studies (ICREA)	159
Bioengineering Institute of Catalonia (IBEC)	158
Polytechnic University of Barcelona (UPC)	141
Hospital Duran i Reynals	124
Vall d’Hebron University Hospital Research Centre (VHIR)	122
Hospital Germans Trias i Pujol	120
Vall d’Hebron Institute of Oncology (VHIO)	98
Hospital del Mar Research Institute	77
Pompeu Fabra University (UPF)	72
Hospital del Mar	67
Hospital Universitari de Bellvitge	63

Highly Cited Papers (HCPs): Articles and reviews ranked in the top 1% most cited in their thematic category and year of publication.

* Data for Spain includes Catalonia.

Sources: WIPO, PatentScope, Clarivate, Science Citation Index Expanded (SCI-E, WoS) and Eurostat (July 2024)

Scientific publications and international patent applications in advanced therapies (2014-2023) – HCP ranking (per million inhabitants)



Leadership of Catalonia’s scientific community in global rankings

After reviewing the quantity and excellence of scientific production and publications, we complete the analysis with an acknowledgement of the scientific and research talent that makes Catalonia’s international leadership in this indicator possible. On the following table we have selected the 30 professionals who stand out for volume and number of HCPs* in the past five years. Some of them are also in the prestigious Stanford ranking, that identifies the 2% most cited scientific personnel worldwide.

Catalan research centres with the most high-impact scientific leaders

#1	
#2	
#3	
#4	
#5	
#6	
#7	
#8	
#9	
#10	

Top 30 Leading Scientists in Catalonia (2019-2023)

			Highly Cited Papers (HCPs)*	World’s Top 2% Scientists
<div>Josep M. Llovet</div> <div>Hospital Clínic, UB, ICREA</div> <div>Gastroenterology and Hepatology, Oncology</div> <div>HCPs 40.28% #616</div>	<div>Margarita Majem Tarruella</div> <div>Hospital de Sant Pau</div> <div>Oncology, Respiratory System</div> <div>HCPs 16.87%</div>	<div>Julian Panés</div> <div>Hospital Clínic, UB</div> <div>Gastroenterology and Hepatology, Pharmacology and Pharmacy</div> <div>HCPs 11.76% #25,911</div>	<div>Carlos A. Saura</div> <div>VHIO, Hospital Universitari Vall d’Hebron</div> <div>Oncology, Neurosciences</div> <div>HCPs 10.23%</div>	<div>Patricia Pozo-Rosich</div> <div>Vall d’Hebron University Hospital, UAB</div> <div>Clinical Neurology, Neurosciences</div> <div>HCPs 9.01%</div>
<div>Ana Oaknin</div> <div>VHIO</div> <div>Oncology, Obstetrics and Gynaecology</div> <div>HCPs 21.98%</div>	<div>Josep Tabernero</div> <div>VHIO, Hospital Universitari Vall d’Hebron</div> <div>Oncology, General Internal Medicine</div> <div>HCPs 16.57% #5,474</div>	<div>Joaquim Raduà</div> <div>Hospital Clínic, UB</div> <div>Psychiatry, Neurosciences</div> <div>HCPs 11.45% #66,806</div>	<div>Ricard Cervera</div> <div>Hospital Clínic, UB</div> <div>Rheumatology, Immunology</div> <div>HCPs 9.89%</div>	<div>Quique Bassat</div> <div>ISGlobal, ICREA</div> <div>Infectious Diseases, Microbiology</div> <div>HCPs 8.70%</div>
<div>Javier Cortés Castán</div> <div>Vall d’Hebron University Hospital, VHIO</div> <div>Oncology, General Internal Medicine</div> <div>HCPs 19.28%</div>	<div>Enriqueta Felip</div> <div>Hospital Universitari Vall d’Hebron, VHIO</div> <div>Oncology, Respiratory System</div> <div>HCPs 15.96% #27,785</div>	<div>Israel Molina</div> <div>Hospital Universitari Vall d’Hebron, UAB</div> <div>Infectious Diseases, Tropical Medicine</div> <div>HCPs 11.11%</div>	<div>Francesc Graus</div> <div>Hospital Clínic, UB</div> <div>Clinical Neurology, Neurosciences</div> <div>HCPs 9.62% #19,498</div>	<div>Lina Badimón</div> <div>Hospital de Sant Pau, UAB</div> <div>Cardiovascular and Cardiac System, Biochemistry and Molecular Biology</div> <div>HCPs 8.21%</div>
<div>Albert Oriol</div> <div>Catalan Institute of Oncology, Trias i Pujol Hospital</div> <div>Haematology, Oncology</div> <div>HCPs 19.05%</div>	<div>Jordi Bruix</div> <div>Hospital Clínic, UB</div> <div>Gastroenterology and Hepatology, Oncology</div> <div>HCPs 15.79% #1,646</div>	<div>Joaquim Bellmunt</div> <div>Hospital del Mar</div> <div>Oncology, Urology and Nephrology</div> <div>HCPs 11.11%</div>	<div>Mark Nieuwenhuijsen</div> <div>ISGlobal, UPF</div> <div>Public, Environmental and Occupational Health, Environmental Sciences</div> <div>HCPs 9.43% #4,721</div>	<div>Josep Malvehy</div> <div>Hospital Clínic, UB</div> <div>Dermatology, Oncology</div> <div>HCPs 8.16%</div>
<div>Àlvar Agustí García-Navarro</div> <div>Hospital Clínic, UB</div> <div>Respiratory System, Intensive Medicine</div> <div>HCPs 17.59%</div>	<div>Mar Tintoré</div> <div>Vall d’Hebron University Hospital</div> <div>Clinical Neurology, Neurosciences</div> <div>HCPs 12.68% #66,740</div>	<div>Anna Sureda</div> <div>Catalan Institute of Oncology, Hospital de Bellvitge</div> <div>Haematology, Oncology</div> <div>HCPs 10.61%</div>	<div>Josep Dalmau</div> <div>Hospital Clínic, UB</div> <div>Clinical Neurology, Neurosciences</div> <div>HCPs 9.38% #2,980</div>	<div>Aleix Prat</div> <div>Hospital Clínic, UB</div> <div>Oncology, General Internal Medicine</div> <div>HCPs 8.09%</div>
<div>Jeffrey V. Lazarus</div> <div>ISGlobal, UB</div> <div>Gastroenterology and Hepatology, Infectious Diseases</div> <div>HCPs 17.32%</div>	<div>Ricard Ferrer</div> <div>Vall d’Hebron University Hospital, UAB</div> <div>Intensive Medicine, Infectious Diseases</div> <div>HCPs 12.31%</div>	<div>Mireia Gascon</div> <div>ISGlobal, UPF</div> <div>Public, Environmental and Occupational Health, Environmental Sciences</div> <div>HCPs 10.53%</div>	<div>Josep Maria Haro</div> <div>Hospital Sant Joan de Déu</div> <div>Psychiatry, Public, Environmental and Occupational Health</div> <div>HCPs 9.30% #36,802</div>	<div>Jordi Alonso</div> <div>Hospital del Mar, UPF</div> <div>Psychiatry, Public, Environmental and Occupational Health</div> <div>HCPs 7.84% #6,567</div>

* Highly Cited Papers (HCPs): Articles and reviews ranked in the top 1% most cited in their thematic category and year of publication.
Sources: Biocat based on Science Citation Index Expanded (WoS) (July 2024) and World’s Top 2% Scientist List 2024 (Stanford/Elsevier)

Catalonia ranks 5th in Europe and 8th worldwide in active clinical trials

Catalonia engaged in 87.2% of the clinical trials performed in Spain, logging 5,368 active trials to come in fifth in Europe (behind France, Spain, Italy and the UK) and eighth in the world. Despite the modest growth in number of trials (+2.65%) over the previous year, Spain’s position in the global ranking fell due to the rise in trials in Italy (+14%). With regards clinical areas, there was strong growth in metabolic diseases (+138.7%), mental health (+49%) and haematology (+37.6%), indicating a prioritisation in focusing on these areas. By contrast, there was a slight decline in oncology (although it continued to be the main area of clinical trials), as well as in the respiratory and cardiovascular systems.

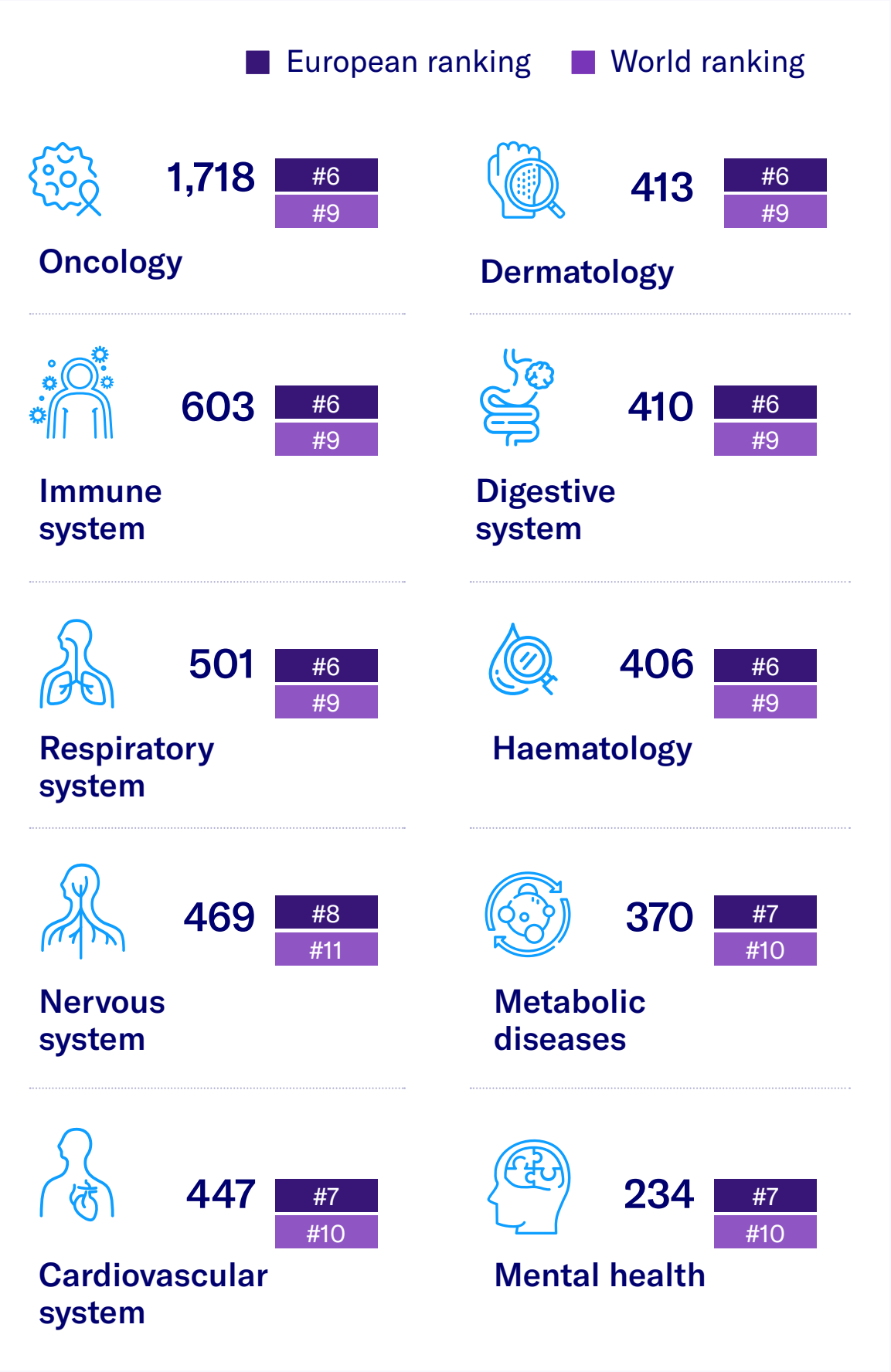
The robustness and cooperation of the healthcare system, its capacity to perform large-scale trials, its highly qualified and recognised sector professionals, advanced scientific and technical equipment and growing patient participation are key differential factors that facilitate the pharmaceutical industry’s commitment to Catalonia.

Top 10 worldwide
Number of active clinical trials (2024)



Source: Clinicaltrials.gov
Note: Active clinical trials include those in the following recruitment statuses: "Not yet recruiting", "Recruiting", "Enrolling by invitation" and "Active, not recruiting".

International comparison by number of trials per clinical area (2024)



Industry-hospital partnerships, the key to the strength of clinical trials in Catalonia

78% of the active clinical trials in Catalonia are driven by the pharmaceutical industry, with the engagement of some 20 leading multinationals that develop clinical research in the territory, such as AstraZeneca, MSD, Roche, Novartis, Johnson & Johnson, Abbvie, Bristol Myers, Sanofi, Lilly and GSK, among others. Collaborative efforts between these companies, hospitals and research centres is key to the successful implementation of the 5,500-plus tests the Catalan centres participate in each year. Around 42% are in phase III, the most advanced phase prior to access to market, and a remarkable 21% are in phase I, crucial for the validation of new drugs and advanced therapies. Of note too are the non-commercial clinical trials (22% of the total) promoted by academic institutions that make it possible to respond to unmet clinical needs beyond commercial interests.

Catalonia is shoring up its strategic position in clinical research, as demonstrated by the fact that 2023 saw Spain become the European country with the most clinical trials initiated, surpassing Germany¹. Speeding up authorisation processes is crucial to maintaining this leadership. In 2024, AEMPS approved the first phase I clinical trial using the fast-track procedure that cuts evaluation time by up to 30%.

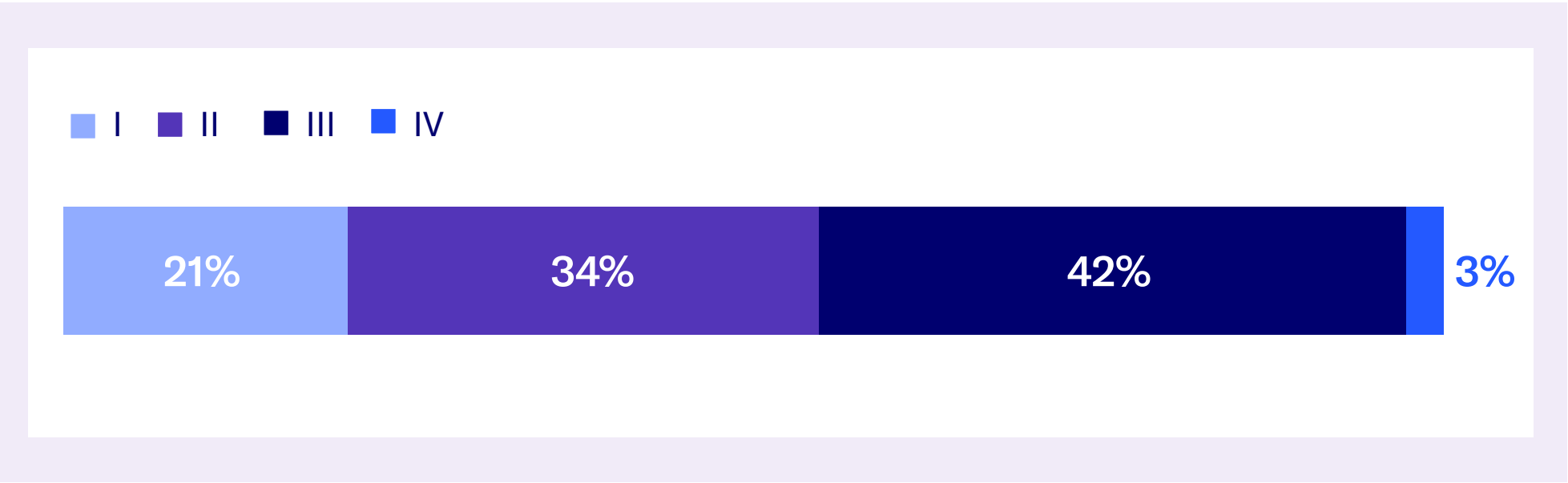
Pharma multinationals developing clinical trials in Catalonia



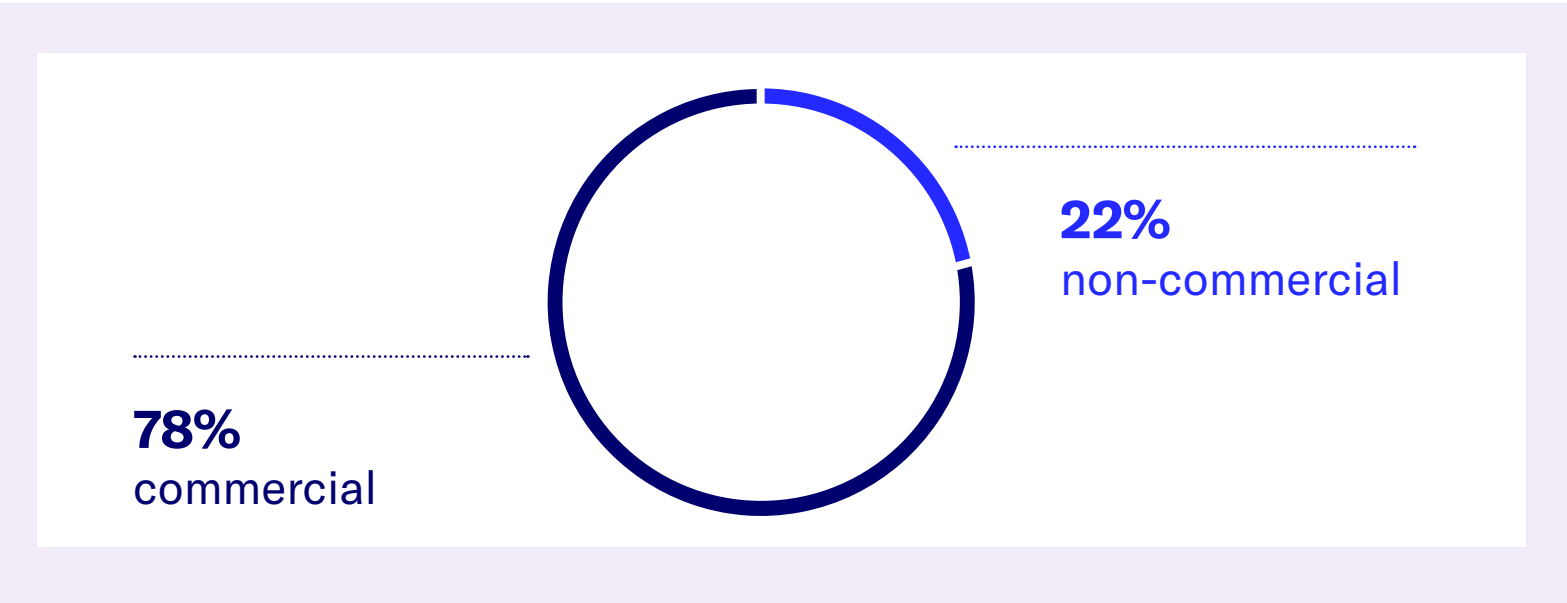
Hospitals and research institutes developing non-commercial clinical trials in Catalonia



Active clinical trials by phase in Catalonia



Active clinical trials by type of sponsor in Catalonia



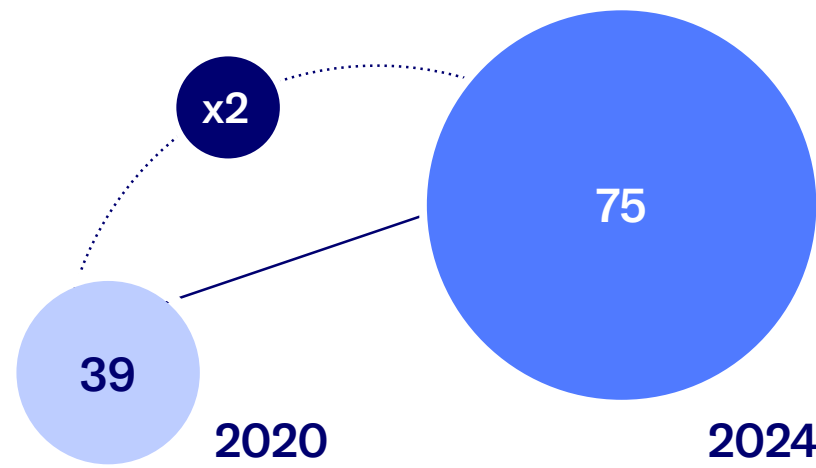
* Non-commercial trials are not funded by the pharmaceutical industry
Source: Clinicaltrials.gov
Note: companies and entities are classified by number of trials.

¹ Assessing the clinical trial ecosystem in Europe / Iqvia, Efpia, Vaccines Europe.

A dynamic pipeline: 75 molecules and therapies in clinical development

The clinical pipeline in Catalonia in 2024 features very significant activity in drug and treatment development, with 54 active molecules and 21 active advanced therapies*. With regards distribution, 50% of the molecules are in phase II, a key stage in demonstrating treatment efficacy and safety, while 35% were in phase I, indicating significant activity in early research and new molecule validation. Oncology was the most active area (driven by companies such as Ascil Biopharm, Peptomyc, Oryzon and Ability), followed by the central nervous system (Grifols, Ferrer and SOM Biotech), dermatology (Almirall and Reig Jofré) and rare diseases (Minoryx, Esteve and others). Salvat was prominent in phase III ophthalmology and haematology.

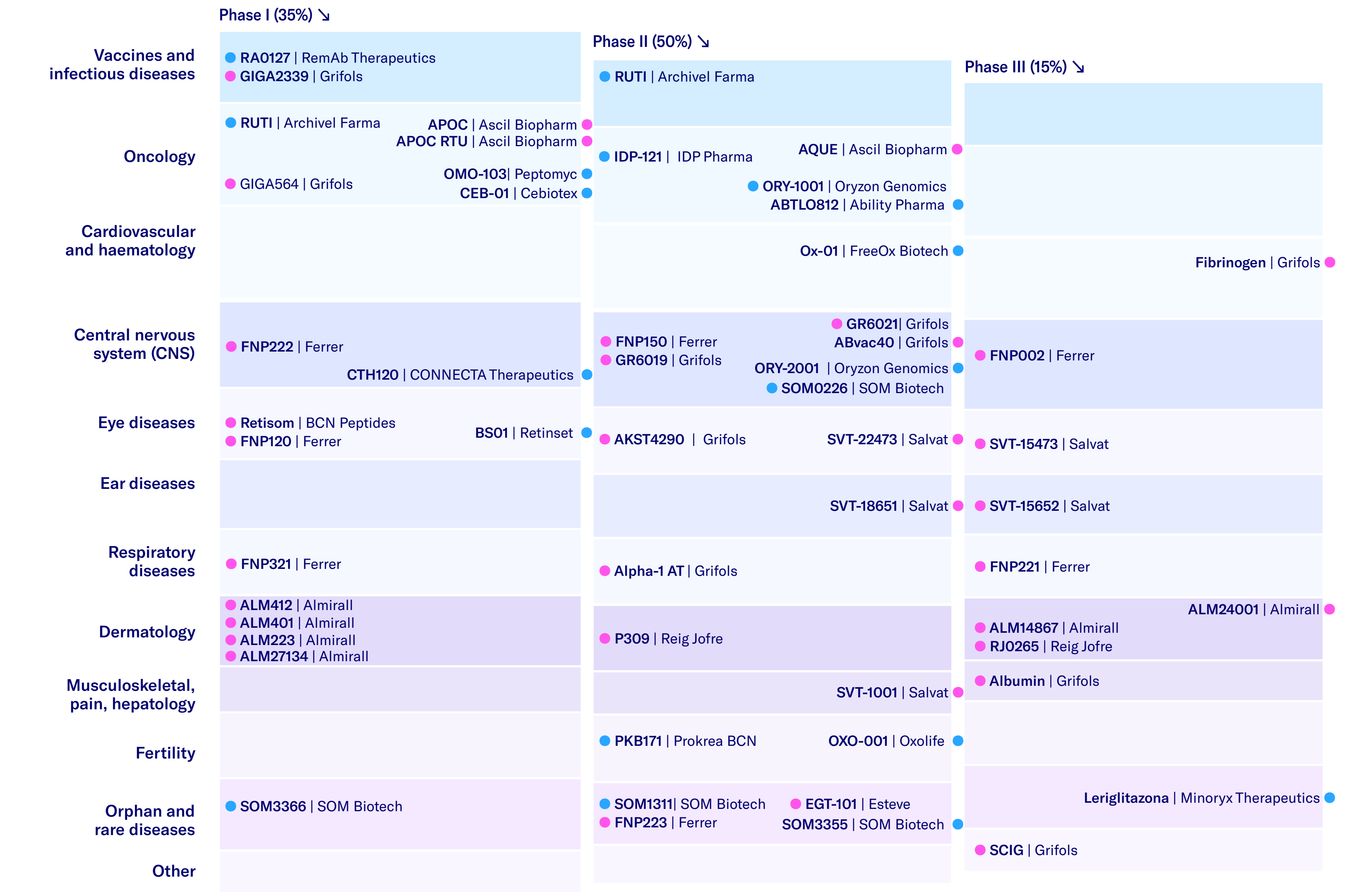
Evolution of molecules and therapies in clinical development (2020-2024)



Source: Biocat
* See following page

Clinical pipeline in Catalonia 2024

● Biotech ● Pharma



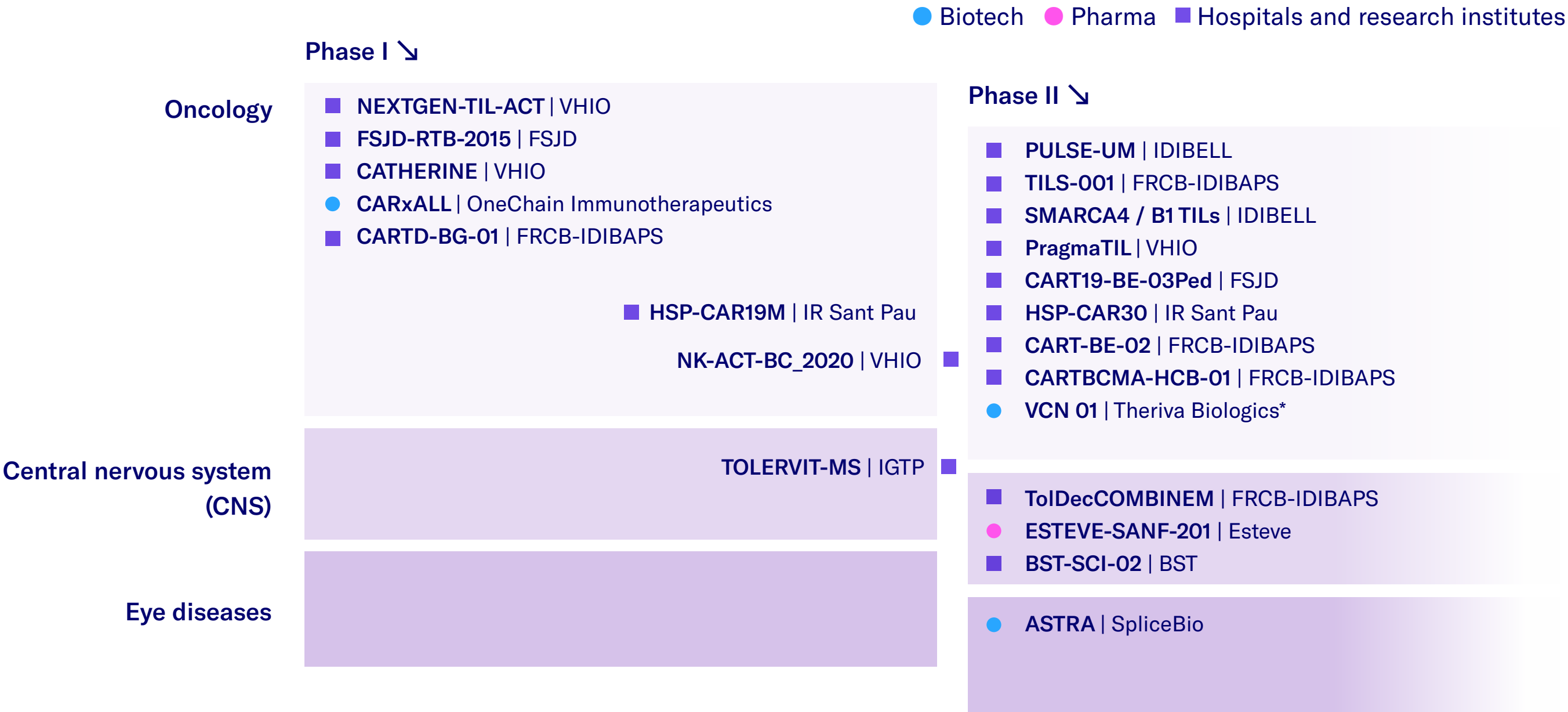
Source: Biocat
Note: the molecules at the intersection between phases have completed the previous phase or are progressing to the next phase.

Leading the development of advanced therapies from Catalonia

Regarding the advanced therapies pipeline, 21 therapies in clinical development (mainly oncology) were identified in 2024, part of the 63 active clinical trials in Catalonia representing some 70% of the total number of advanced therapy trials in Spain. This activity puts Catalonia in 5th place in Europe and 8th worldwide within the context of the 1,900 clinical trials of advanced therapies in progress globally. Among developers, of note was Hospital Clínic (FCRB-IDIBAPS), which produced therapies for 13 hospitals across Spain and was the only centre to develop two CAR T-cell therapies for cancer, both approved by the AEMPS¹ for use as advanced non-industrially manufactured therapies and one of them (ARI-0001) designated PRIME by the EMA². With 450 patients treated, Hospital Clínic leads the production of academic CAR T-cell therapies in Europe. Meanwhile, the VHIO, in collaboration with the Hospital del Mar Research Institute, is developing a new cell therapy for breast cancer and other HER2+ tumours, while SpliceBio is working on a new study for the genetic eye disease Stargardt disease. As for the private sponsors of these studies, Pfizer, Novartis and Johnson & Johnson stand out among the top 5, reflecting the confidence large multinationals have in the BioRegion as a hub for high-impact biomedical innovation.

¹ AEMPS: Spanish Agency of Medicines and Medical Devices
² EMA: European Medicines Agency

Clinical pipeline of advanced therapies developed by Catalan entities (2024)



*Theriva Biologics SL is the Catalan subsidiary of Theriva Biologics Inc, which is developing VCN-01

Developing entities

BANC DE SANG I TEIXITS

Clínic Barcelona

UNIVERSITAT DE BARCELONA

OneChain

SJD Sant Joan de Déu Institut de Recerca

SANT PAU Campus Salut Barcelona

IDIBAPS

Institut de Recerca Sant Pau

ESTEVE Advancing health together

IDI BELL

SPLICEBIO

Theriva BIOLOGICS

IGTP Institut de Investigació Gènoma Tres i Píxel

VHIO Vall d'Hebron Institut d'Oncologia

Top 5 commercial trial sponsors

#1

Pfizer

#2

NOVARTIS

#3

Johnson & Johnson Innovative Medicine

#4

Autolus

#5

Incyte

Sources: Clinicaltrials.gov and Biocat

63

active clinical trials in advanced therapies in Catalonia (69% of the total in Spain)

#8

world ranking

#5

European ranking

ATMP Catalonia: building one of Europe’s front-runner hubs in advanced therapies

With the aim of working to find solutions to the main challenges detected in the field of advanced therapies and to position the BioRegion of Catalonia internationally as one of the principal European hubs in this field, the Advanced Therapies Network of Catalonia (ATMP Catalonia), coordinated by Biocat, was launched on 10 June 2024.

The Network comprises 64 companies and entities established in Catalonia that represent research, production, services and financing for the development of advanced therapies. As we can see in the figure, in research we find leading centres such as Clínic-IDIBAPS, VHIO, IGTP, Hospital del Mar, Sant Pau and the ICO, which promote research in cell, genetic and CAR T-cell therapies. The group includes biotech initiatives such as SpliceBio, Telomere Therapeutics, OneChain, Remab and Theriva Biologics contributing to treatment creation. The involvement of multinationals such as Amgen, AstraZeneca, Almirall, Johnson & Johnson, Grifols, Esteve, Novartis and CSL Behring shore up the ecosystem’s scaling potential. Suppliers, manufacturers and venture capital funds like Ysios, Aliath, Asabys, Invivo and Inveready round out the Network structure.

Map of industrial capabilities in advanced therapies in the BioRegion of Catalonia



¹ Therapy developers and Manufacturers and product suppliers.
² Therapy developers, Manufacturers and product suppliers and Service providers.
Source: Biocat

Healthtech products and services pipeline (2024)

The healthtech subsector in Catalonia displayed dynamic and upwards-trending activity, despite the decline in investment in the digital health segment we looked at in the previous chapter. The results of the survey* carried out with Fenin for the third year in a row showed a progressive maturity of startups and companies, with a greater presence of products on the market (61% medical devices) and an increase in the level of clinical evidence compared to 2023. CE certification predominated in regulatory standards, although 63% of the trials were still in the approval process. The ecosystem was shored up through strategic collaborations, mainly with hospitals but also with companies, universities and research centres.

39%

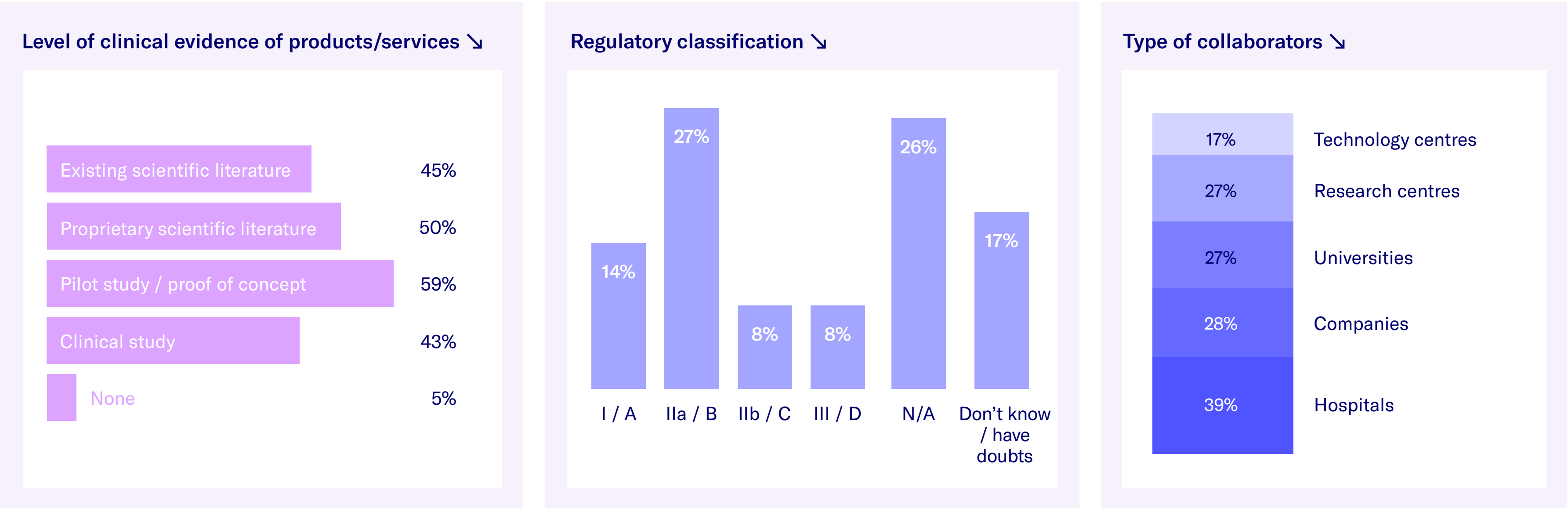
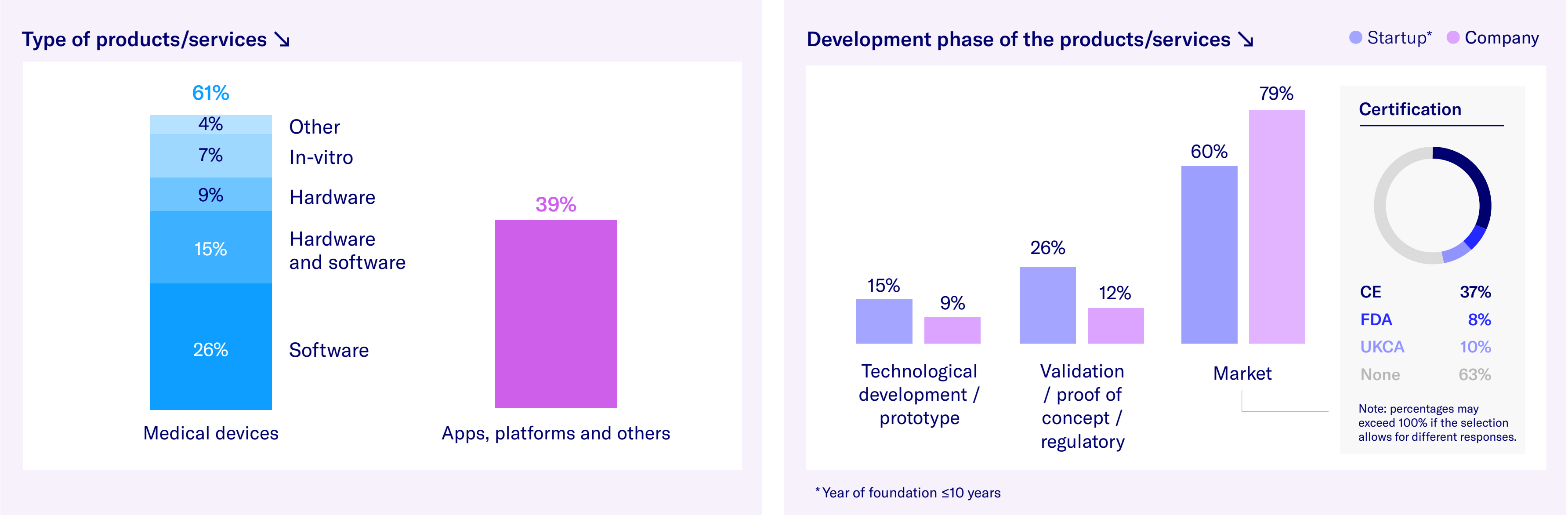
Of startups have at least one patented product

53%

Of startup products have been patented

* Survey of 242 healthtech companies active in Catalonia in 2024, with a 38% response rate. 73% of the responses are from startups.

Type and classification of healthtech products and services



Business model and collaborations in healthtech products and services

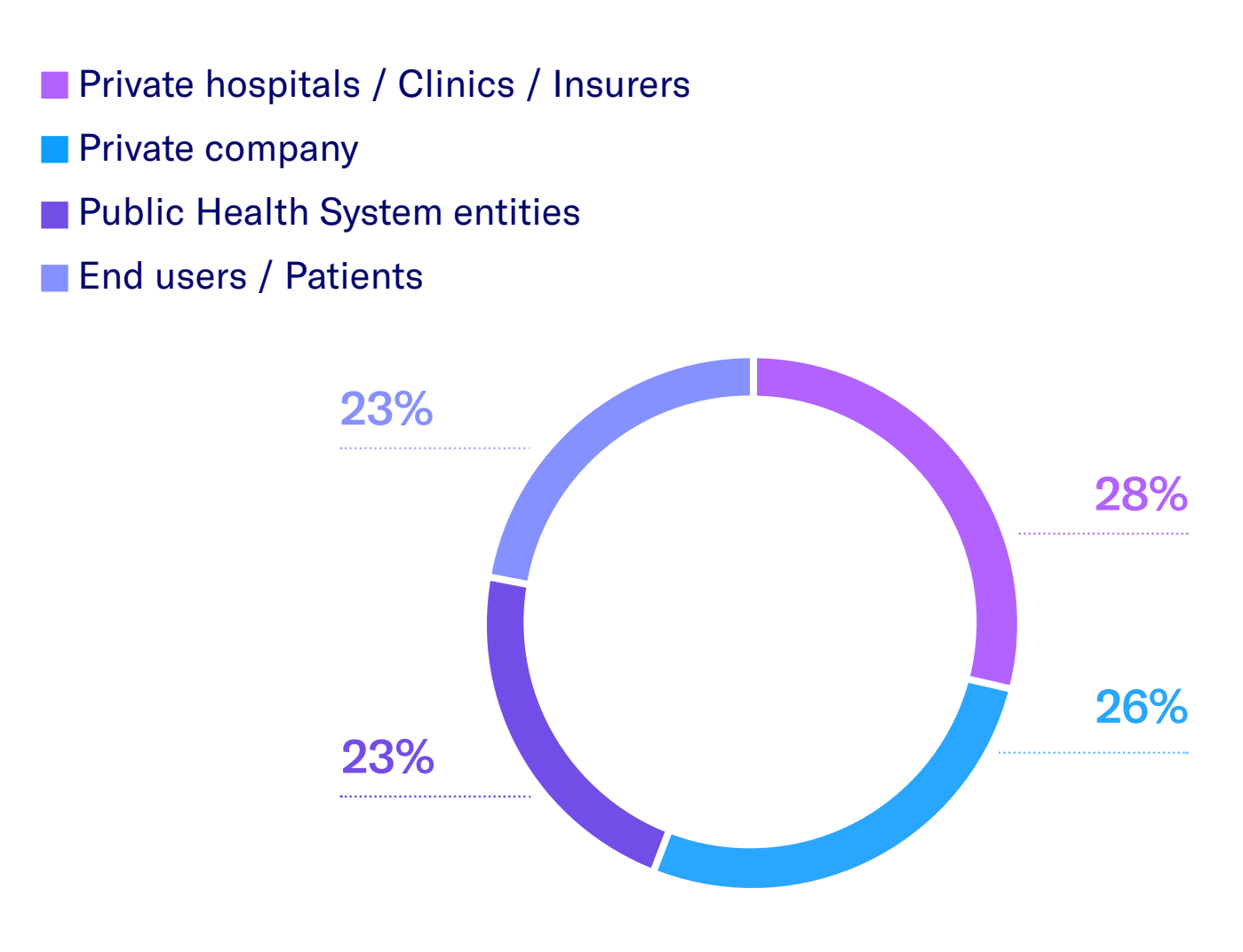
The healthtech subsector in Catalonia shows a clear **B2B orientation (77%)**, with growing diversification in marketing channels and strategic institutional alliances.

In relation to revenue structure, **for 40% of the companies, private sector sales accounted for more than 75% of revenue**, while end users represented less than 25% of total revenue for 86% of the companies. The pattern for startups was similar to the previous year: **60% invoiced less than € 1M and 26% had yet to produce income**. Around 14% of well-established companies posted north of €10 M in turnover. In terms of customer portfolio, healthtechs working with companies, hospitals or the Public Health System tended to have relationships with few customers, while end-user-oriented companies had more scalable models. With regards collaborators, of note and in order were the hospitals Vall d’Hebron, Hospital Clínic, Sant Joan de Déu and Sant Pau, then Parc Taulí, Hospital del Mar and Hospital Bellvitge.

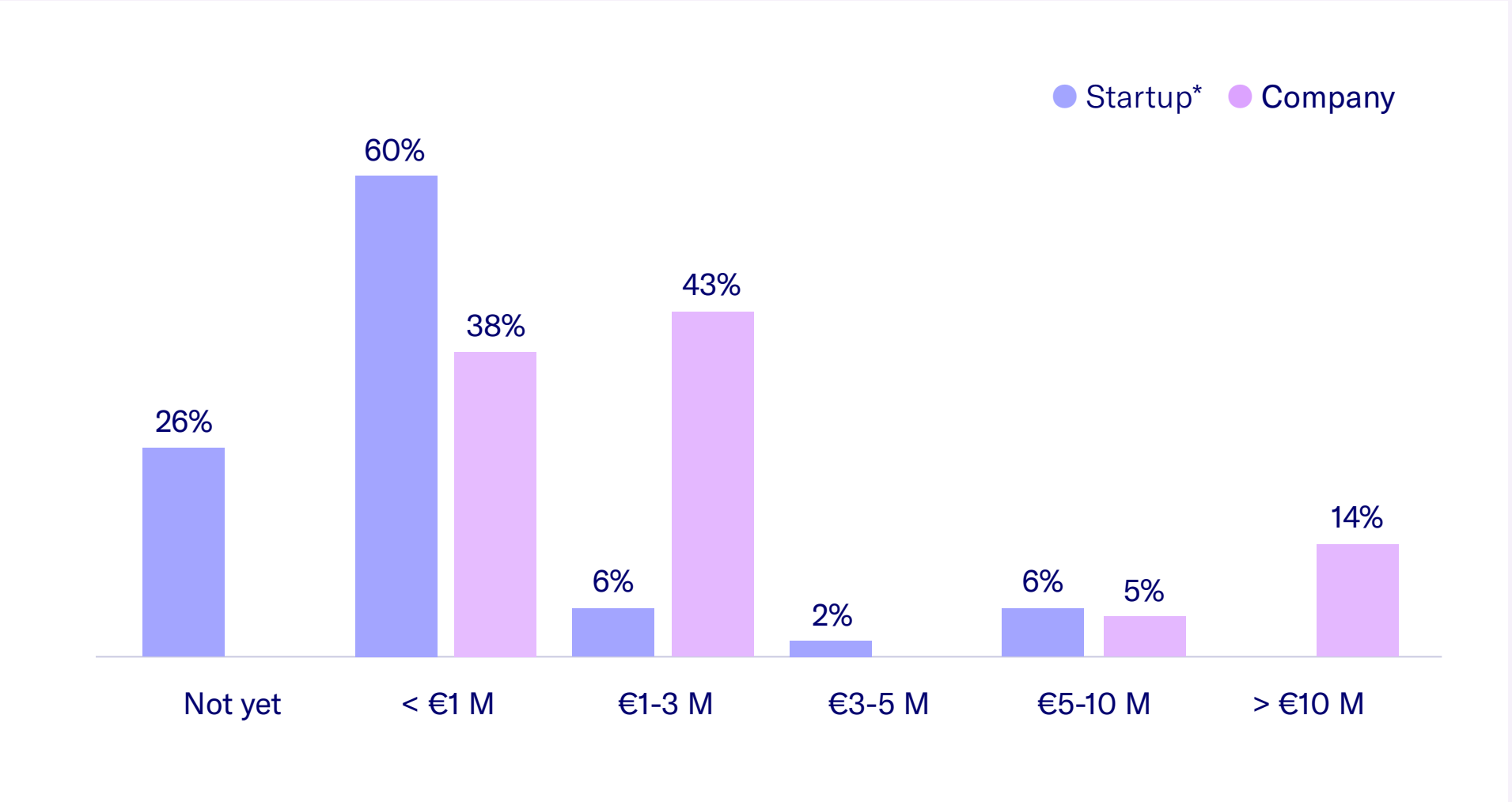
* Survey of 242 healthtech companies active in Catalonia in 2024, with a 38% response rate. 73% of the responses are from startups.

Business model and collaborators in healthtech products and services

Main business model ↘

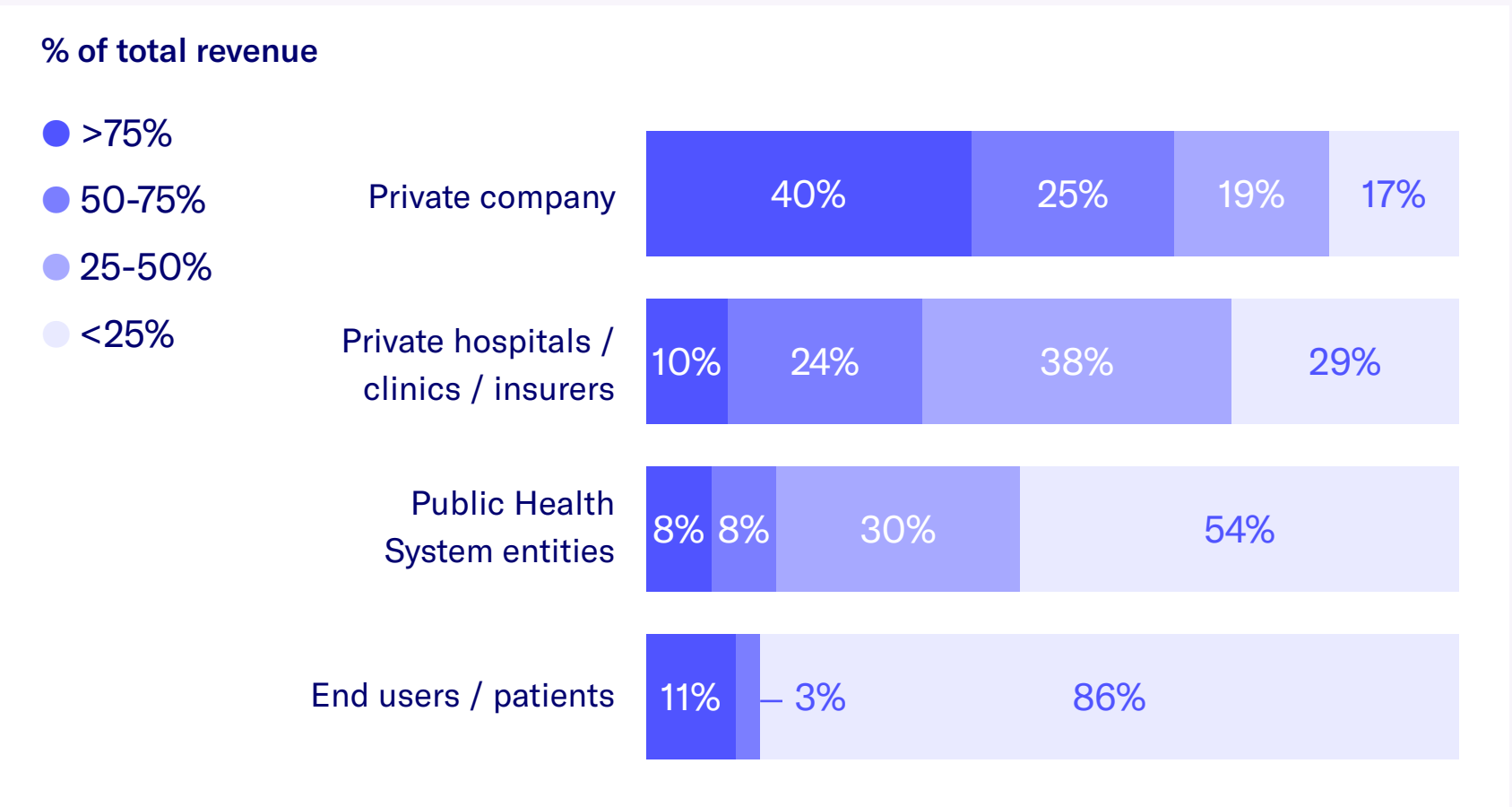


Annual revenue from sales ↘



* Year of foundation ≤10 years

Relationship between revenue percentage and type of customer ↘



Main customers and collaborators ↘



Main customers ↘



Note: companies and entities are ordered according to the number of companies that have them as customers.

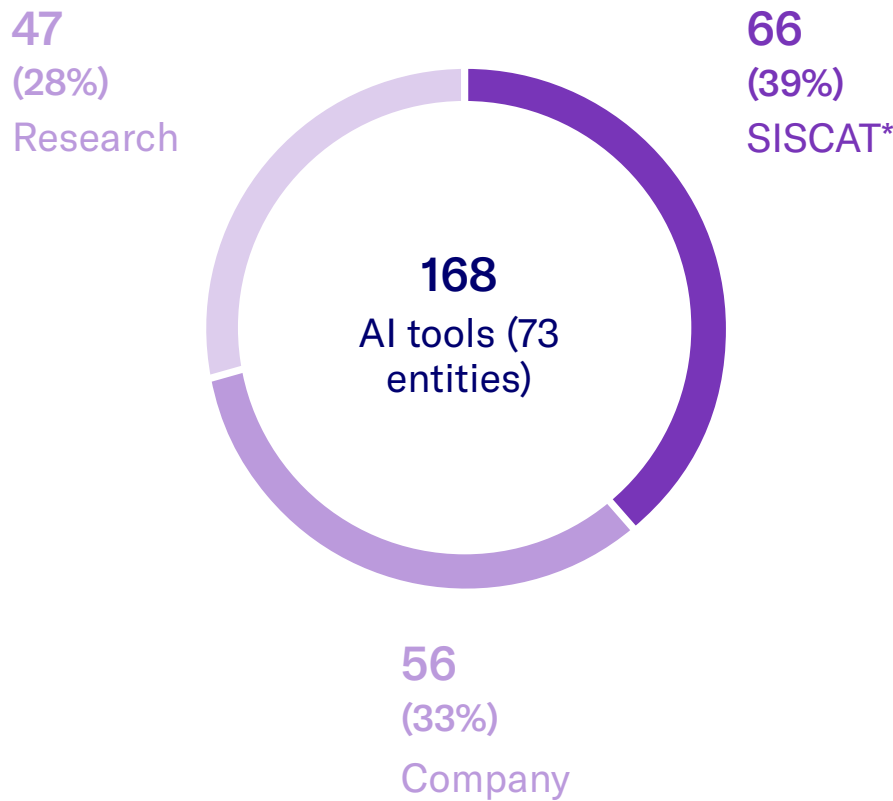
Snapshot of Artificial Intelligence (AI) in the BioRegion: 168 AI tools, mainly used in hospitals

Last year’s Report featured the first results of the AI Observatory in Health which began to record and characterise the AI tools in operation in Catalonia. In 2024, data moved forward in the implementation and maturity of these technologies, as reflected in the infographic: 168 AI tools registered by 73 entities, 58% of which are already in advanced stages of development or deployment (TRL 6-9).

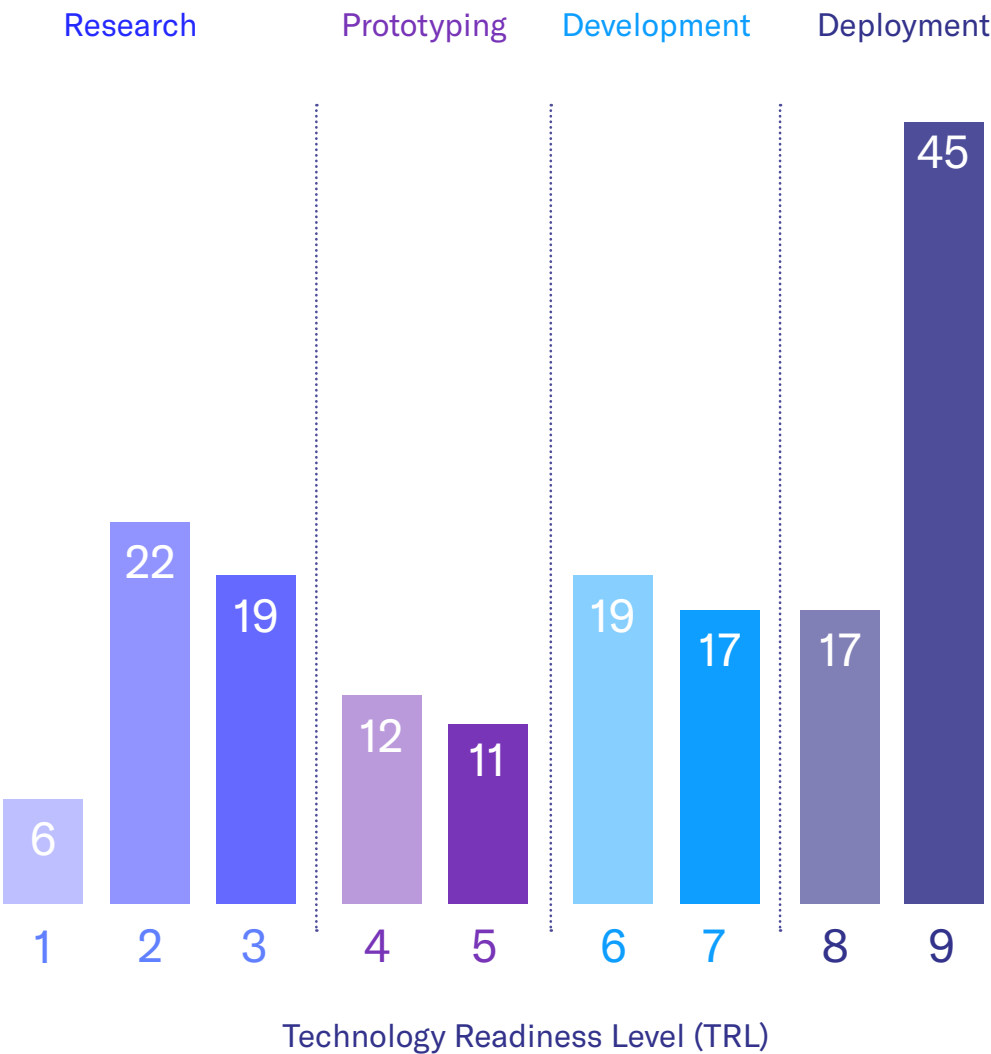
Hospitals continued to be the main setting for the implementation of AI solutions in the healthcare sector (83%), with a growing presence in primary care as well (41%). In terms of technological maturity, hospitals had the most solutions in the deployment phase, up 26.1% on the previous year.

Applications in radiology, oncology and family medicine topped the list of the most benefitted specialties thanks to a strong cross-cutting component and public -private collaborators- fundamental for the development and validation of these technologies. Some 44% of PPPs were dedicated to the deployment of AI tools, shoring up the strategic role played by SISCAT* and the CERCA centres.

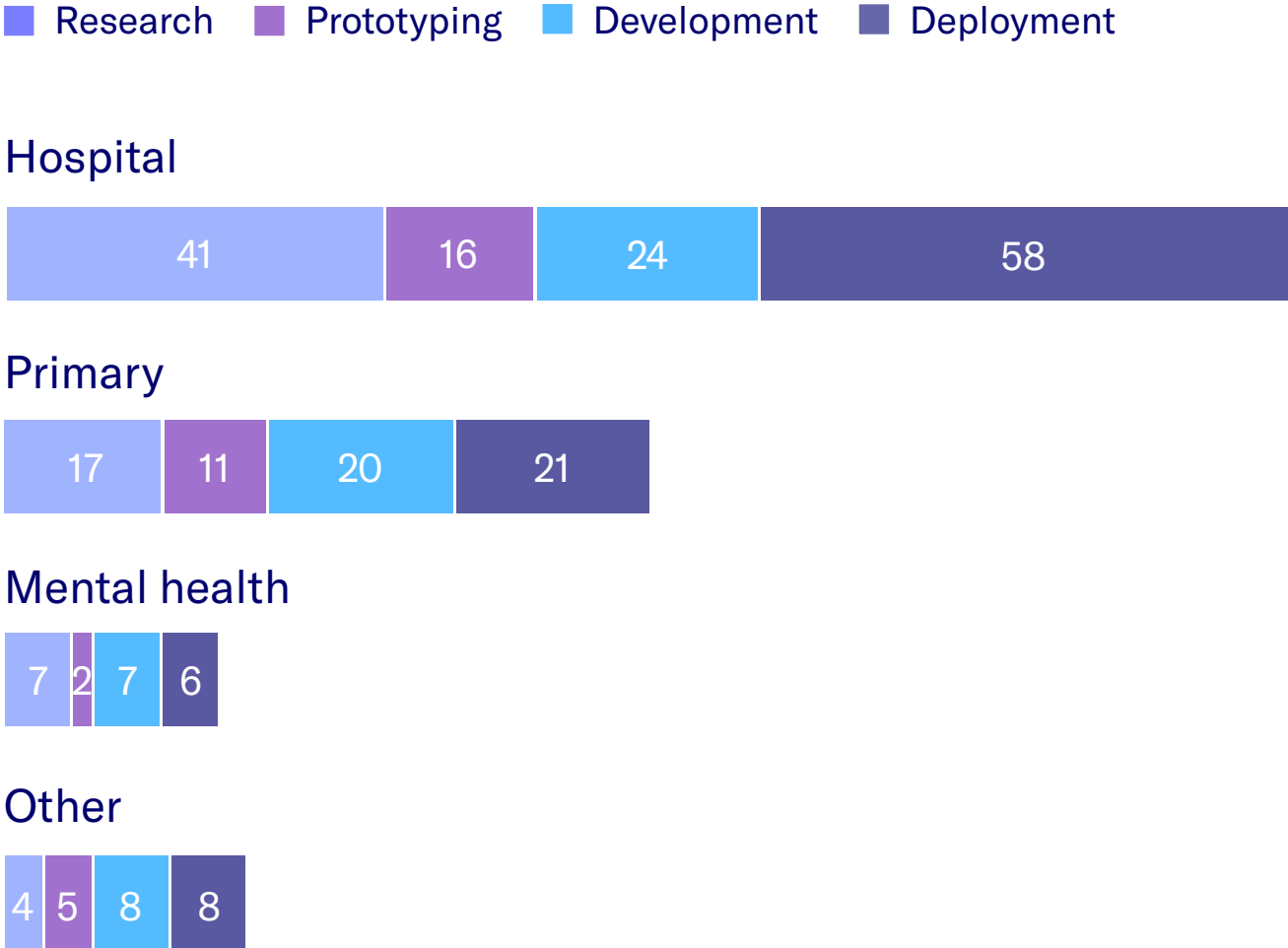
Number of AI tools registered in Catalonia



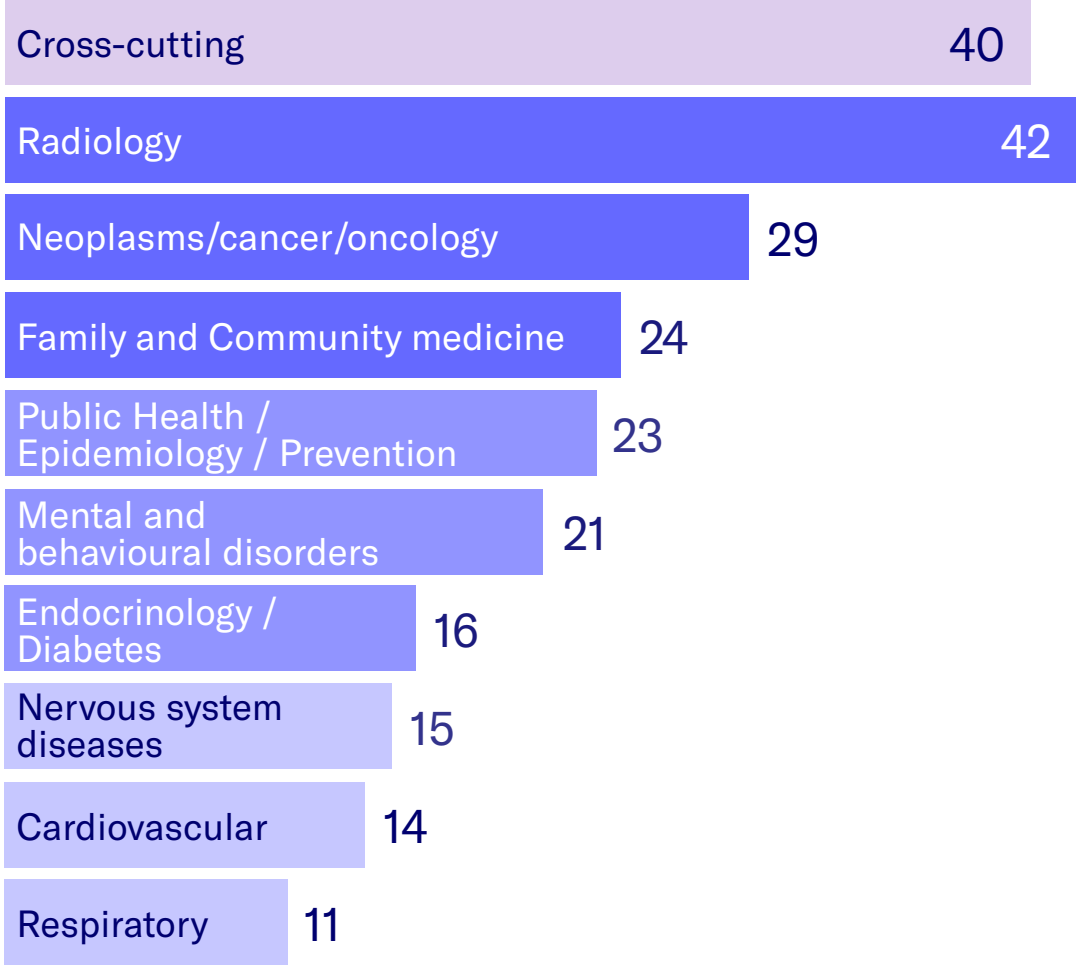
Technological maturity of tools



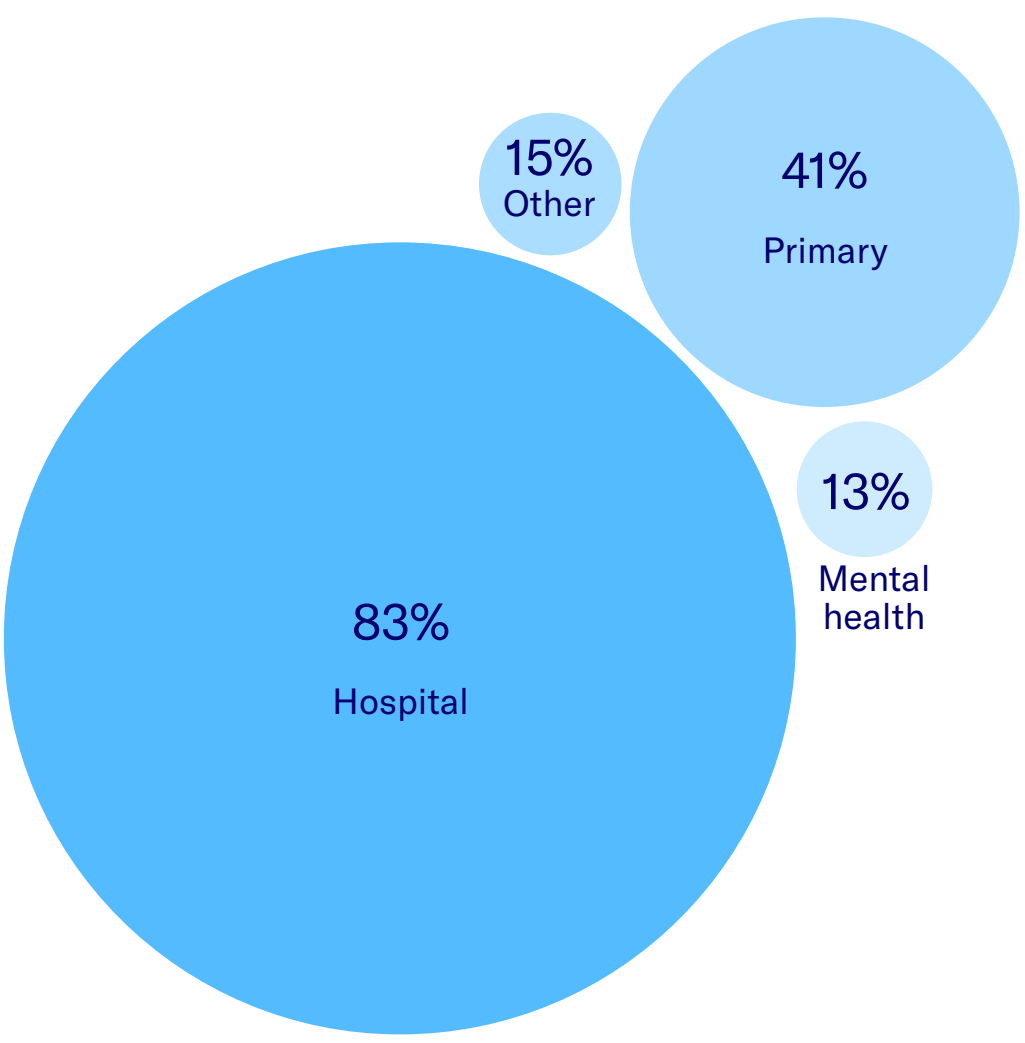
Maturity phase by care setting



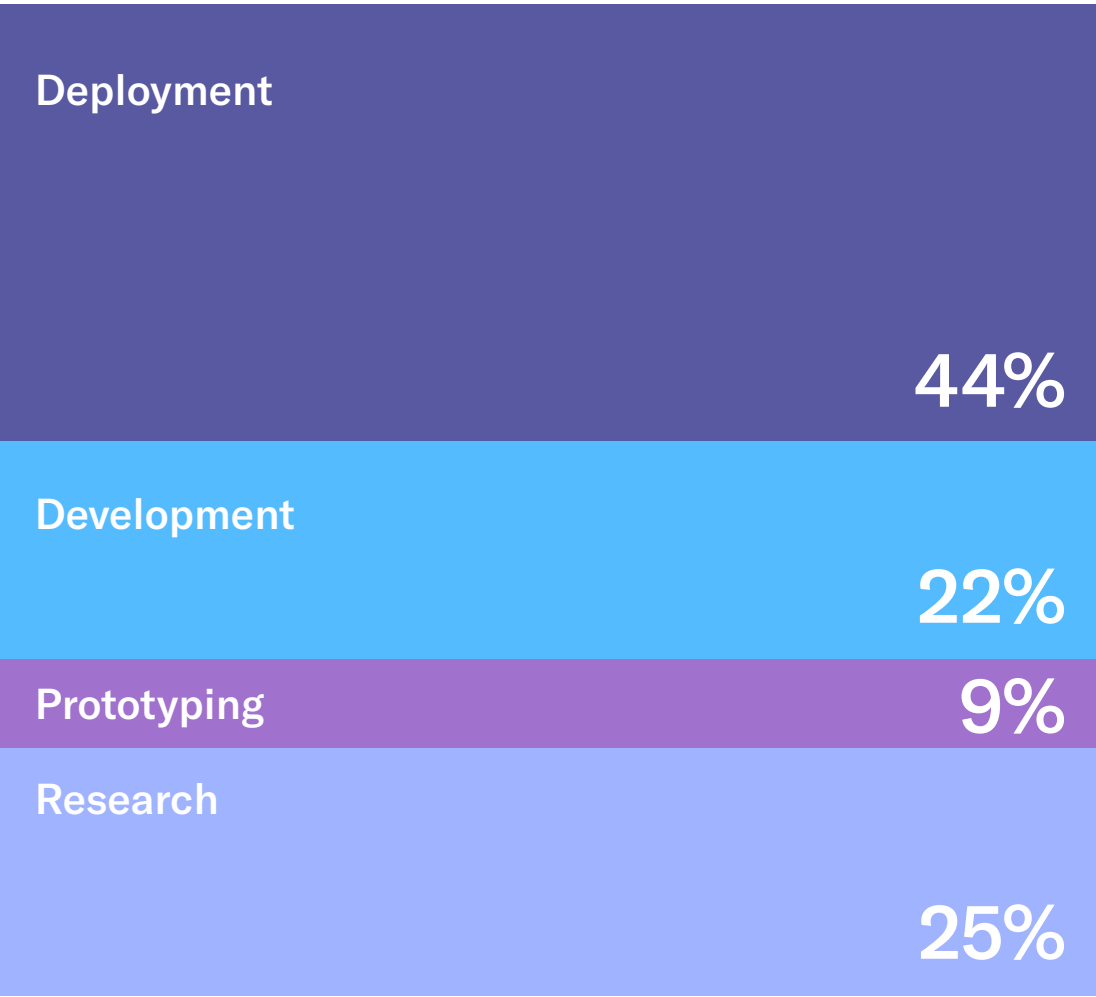
Top 10 medical specialties



Care setting ↘



Public-private collaborators by level of maturity ↘



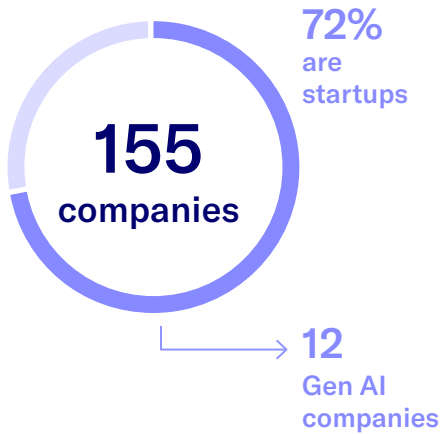
* SISCAT (Comprehensive Public Health System of Catalonia)

Source: AI in Health Observatory. Programme for the promotion and development of Artificial Intelligence in the Health System. Social Health ICT, Government of Catalonia, December 2024
Note: percentages may exceed 100% if the selection allows for different responses.

Diversification, investment and innovation of healthcare AI companies in Catalonia

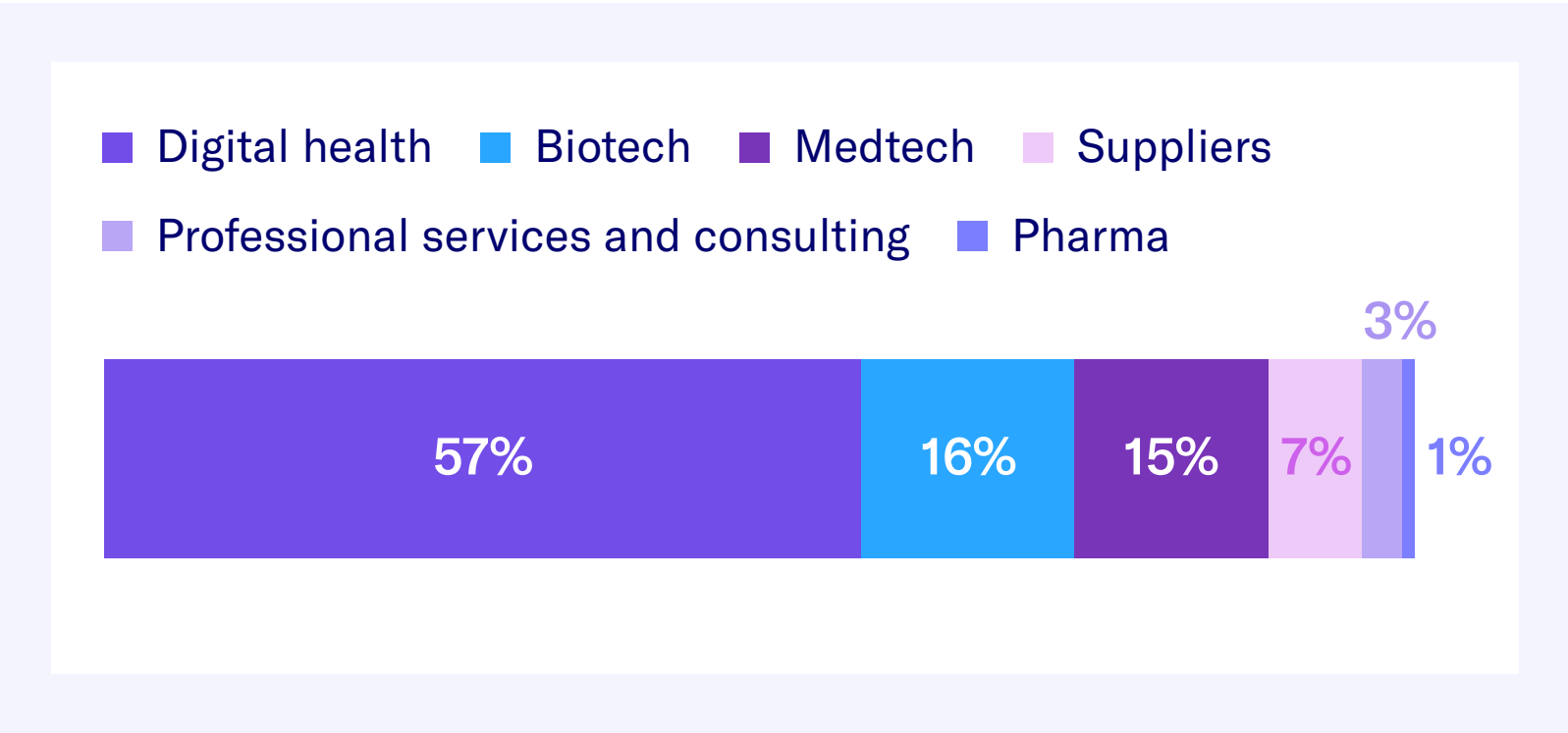
The analysis of AI tools deployed in centres, hospitals and the public health system of Catalonia is completed with a representation of the type, activity, map* and investment raised by the 155 companies that develop this sector-transforming and strategic technology. According to Dealroom, 30% of global VC funding in 2024 went to AI startups. The figure was even higher in Catalonia, where the 112 healthcare AI startups and scaleups attracted 61% of total venture capital raised. Of the €176.4 million raised in 2024, 95.5% came from venture capital allocated to three main rounds: Impress, INBRAIN Neuroelectronics and WIVI Vision. It is also important to note that 93% of total accumulated investment (€627 M) was concentrated in the past 5 years. Healthcare AI companies focused on areas including personalised medicine, telemedicine, big data and medical imaging. With regards therapeutic areas of application, central nervous system diseases and oncology stood out as the most active areas with the greatest growth potential.

Companies working in artificial intelligence (AI) applied to the healthcare sector in Catalonia ↘

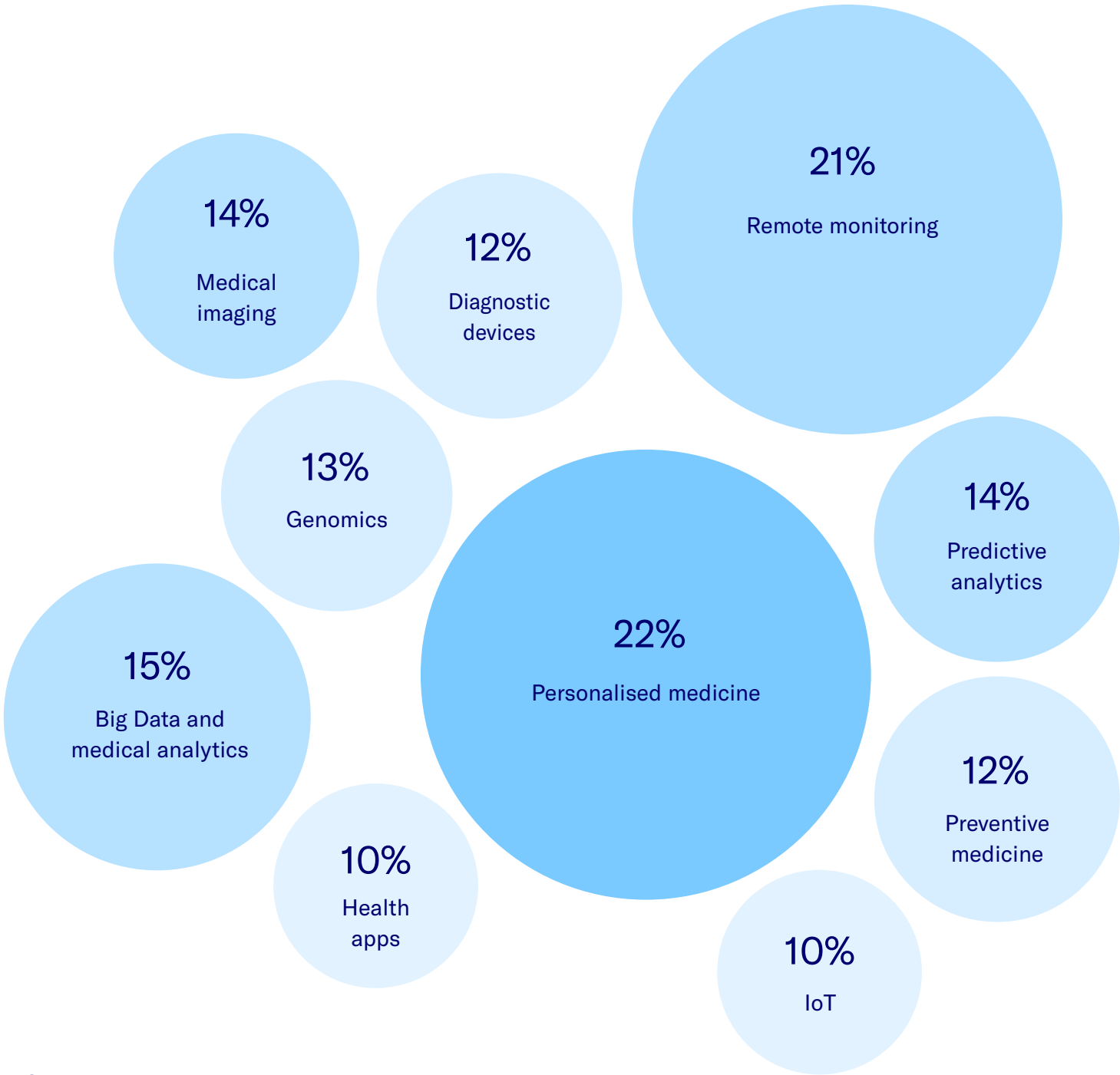


* See following page

Types of companies

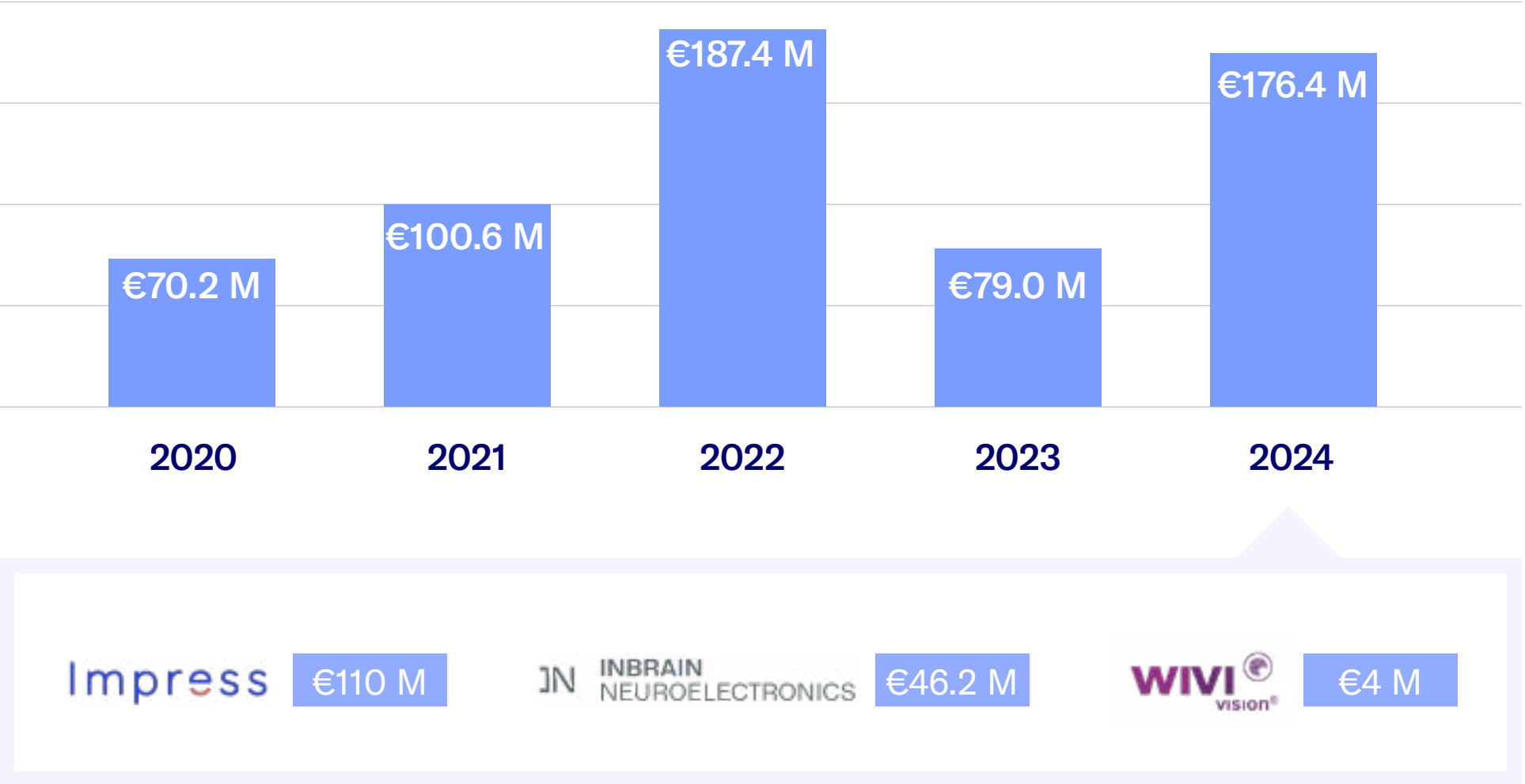


Main subsectors

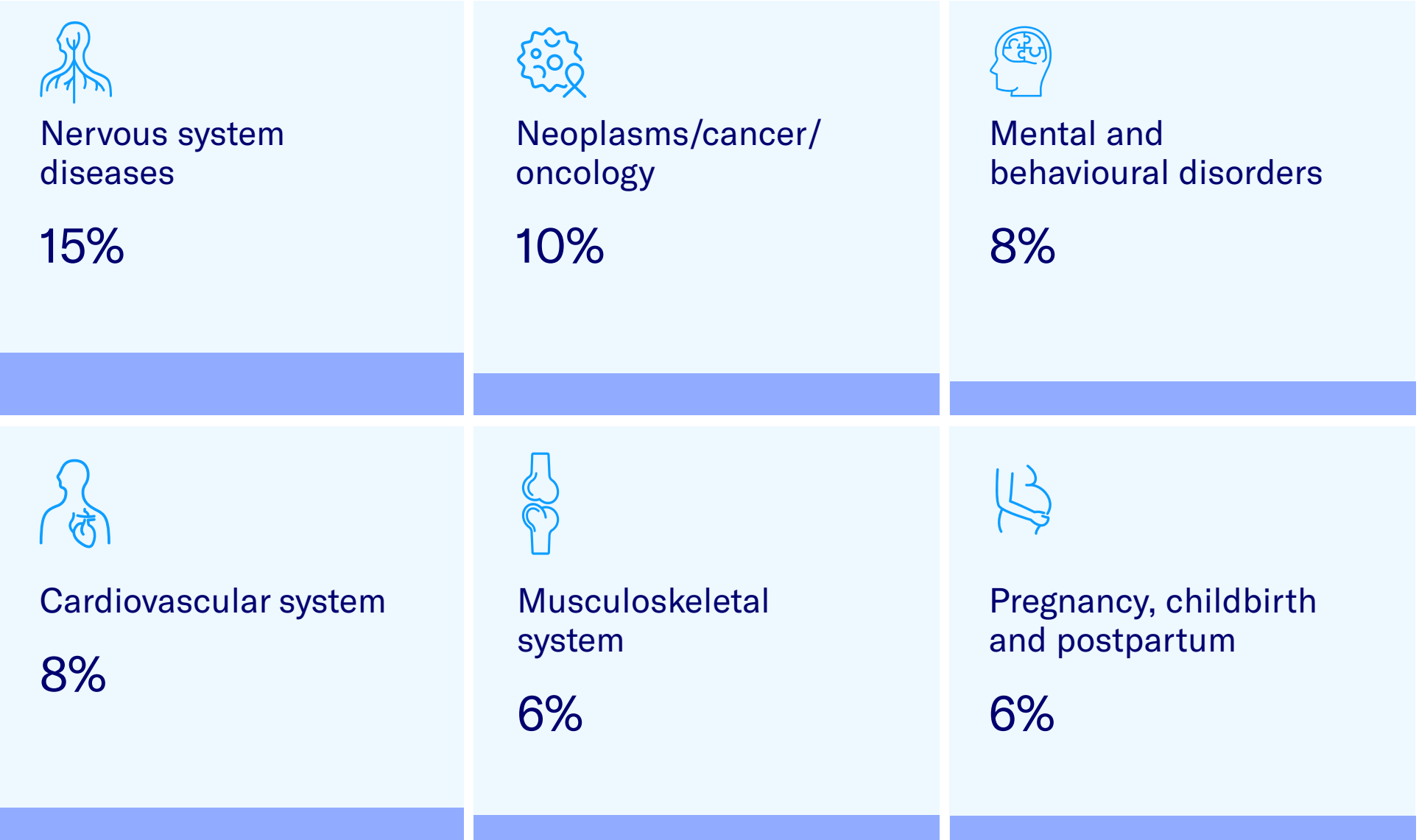


Source: Biocat

Evolution of investment (2020-2024)



Main therapeutic areas



112 startups and scaleups working in healthcare AI in Catalonia

This map, which brings together more than 155 companies dedicated to artificial intelligence applied to healthcare in Catalonia, reflects major diversification, with a presence across 13 key categories: R&D, molecule discovery, diagnosis and medical decision support, monitoring, data analysis, medical imaging and patient wellbeing. It also covers a large group of consulting and engineering service providers, including major international players such as Amazon, Google and Microsoft. Such a panorama demonstrates the capacity for innovation applied to practically the entire healthcare cycle, from prevention to treatment and patient follow-up. Most of these companies (112) are startups and scaleups, a figure that represents an increase of 32% compared to 2023. They also account for 24% of the total number of active startups and scaleups in the BioRegion (470). Between 2020 and 2024, there was also 26% growth in startups and scaleups founded by women, contributing to female leadership in the life sciences and healthcare sector.

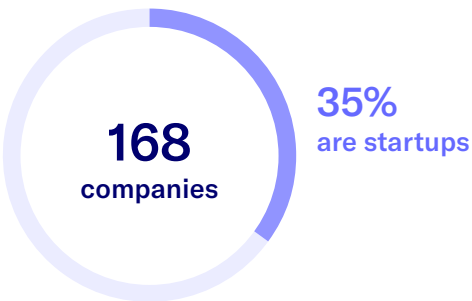
Companies working in AI applied to healthcare in Catalonia



Catalonia, leading synthetic biology (SynBio) hub in Spain, with 168 companies

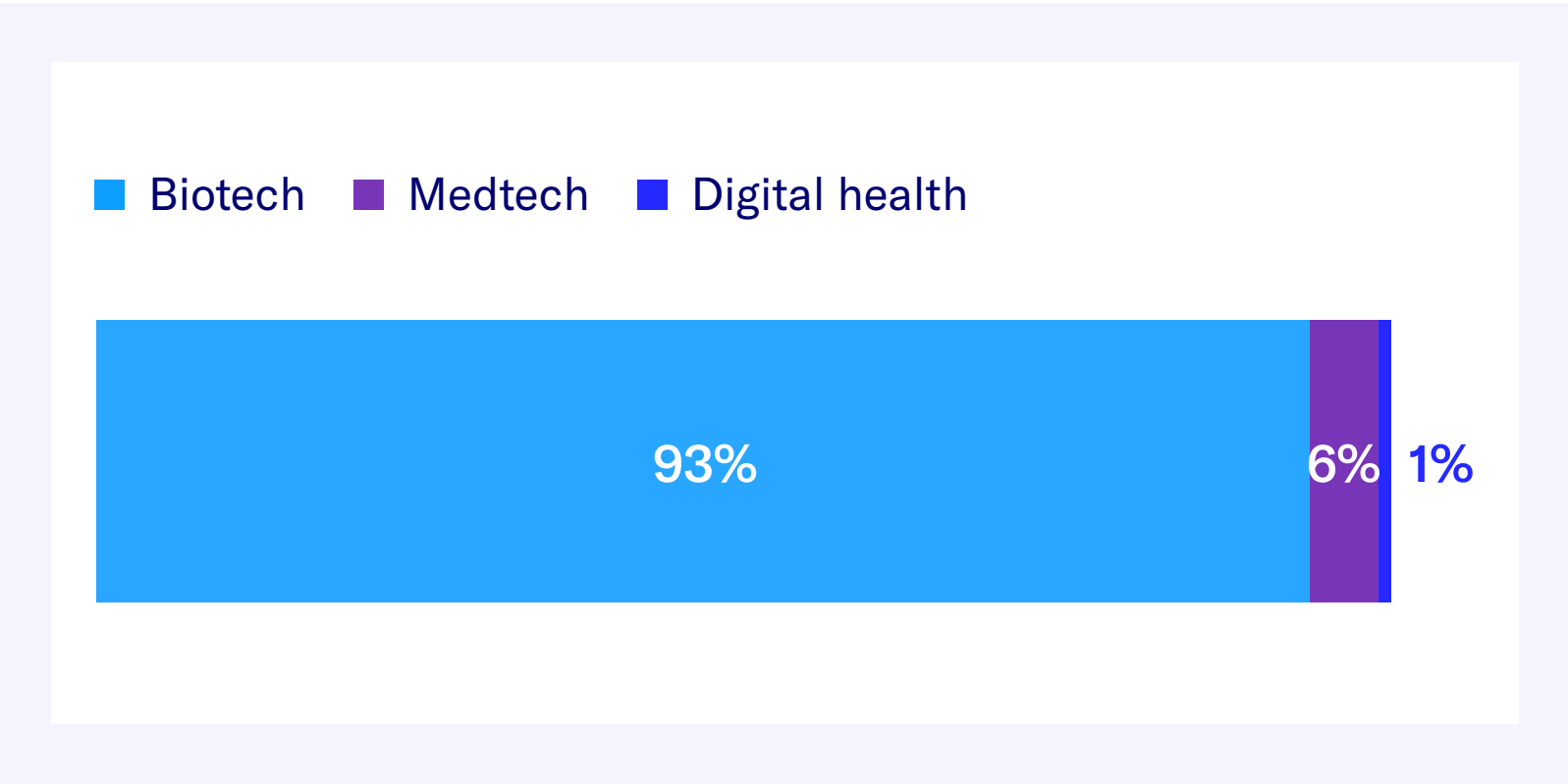
Catalonia has established its position as the leading synthetic biology hub in Spain* with 168 companies concentrating 36% of sector businesses, ahead of Madrid (15%) and Andalusia (12%). Diagnostics (23%) and applied artificial intelligence (14%) lead the key subsectors, while gene therapy (13%) and biocomputing (10%) are gaining ground in new technology development. In the clinical field, 27% of the initiatives are concentrated in oncology, followed by neurological (14%) and infectious diseases (13%). 2020-2024 investment showed an evolution of sustained increases and evidence of growing interest in this field. Companies such as INBRAIN Neuroelectronics (€46.2 M) and Heura (€40 M) attracted the largest rounds. The CRG, IBEC and IRB Barcelona are leaders in SynBio research in Catalonia thanks to their prestigious researchers, high-impact scientific production and leading-edge research groups.

Companies working in synthetic biology in Catalonia ↘

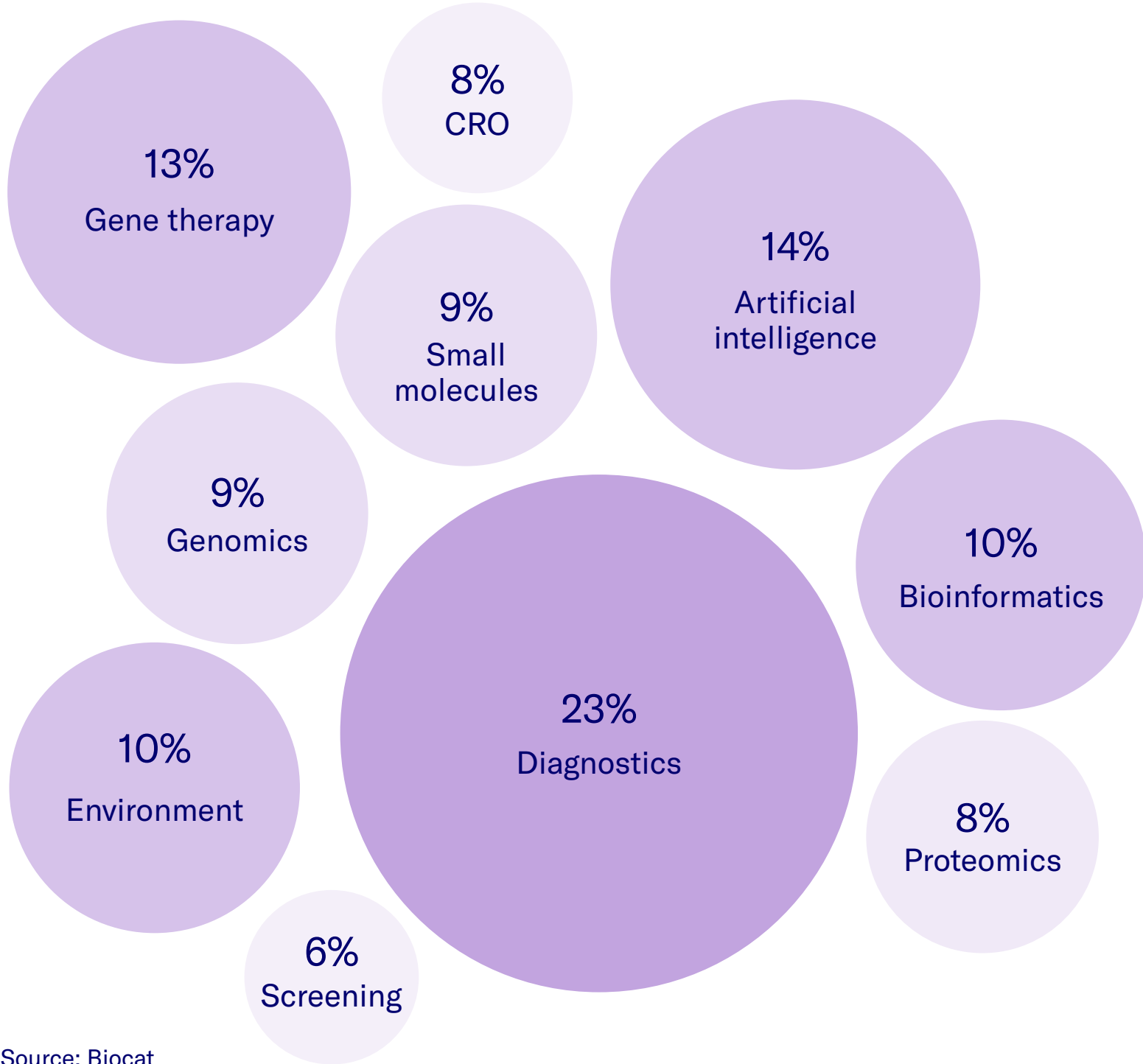


* ATG SynBioSpain

Types of companies

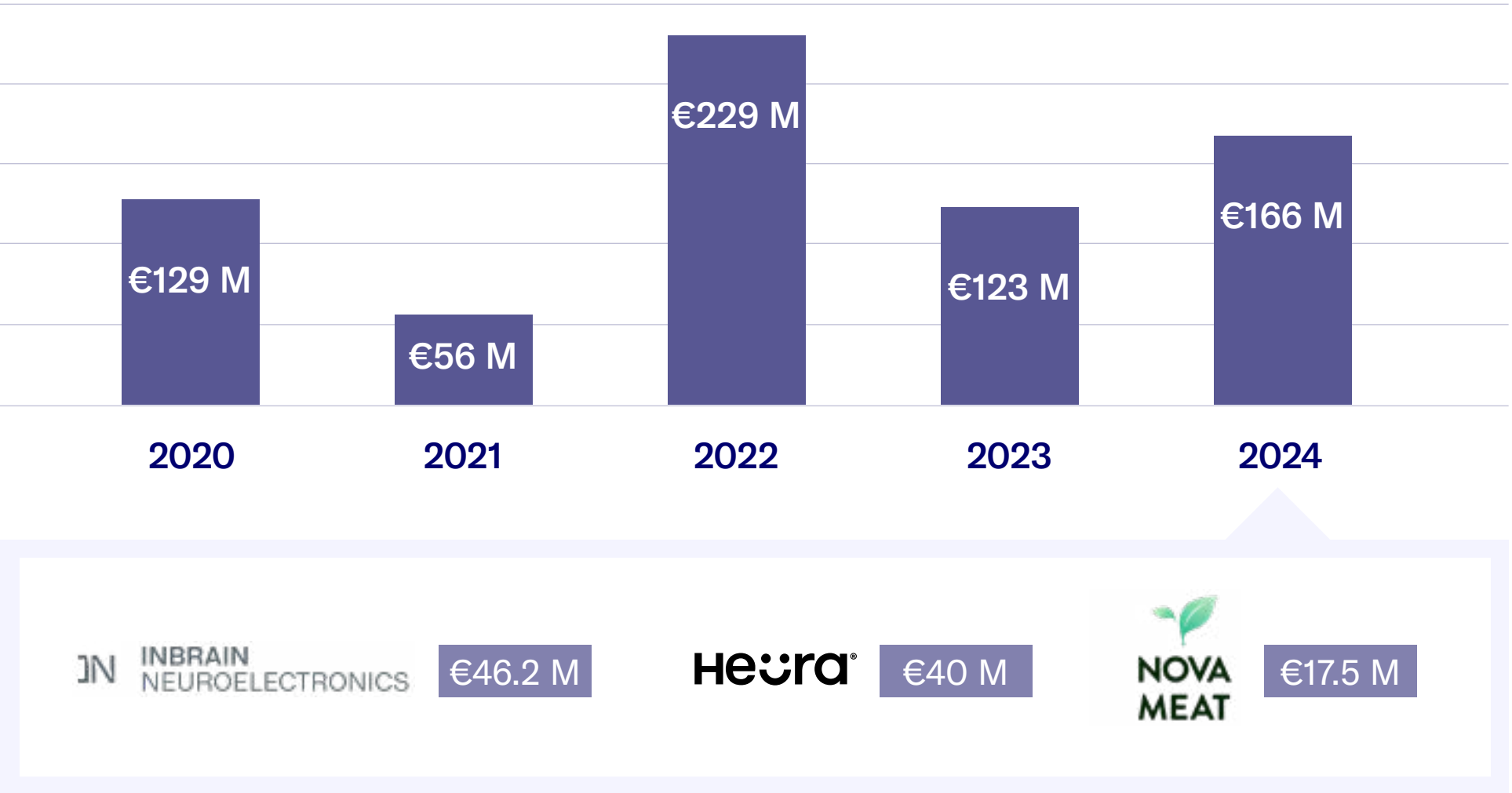


Main subsectors

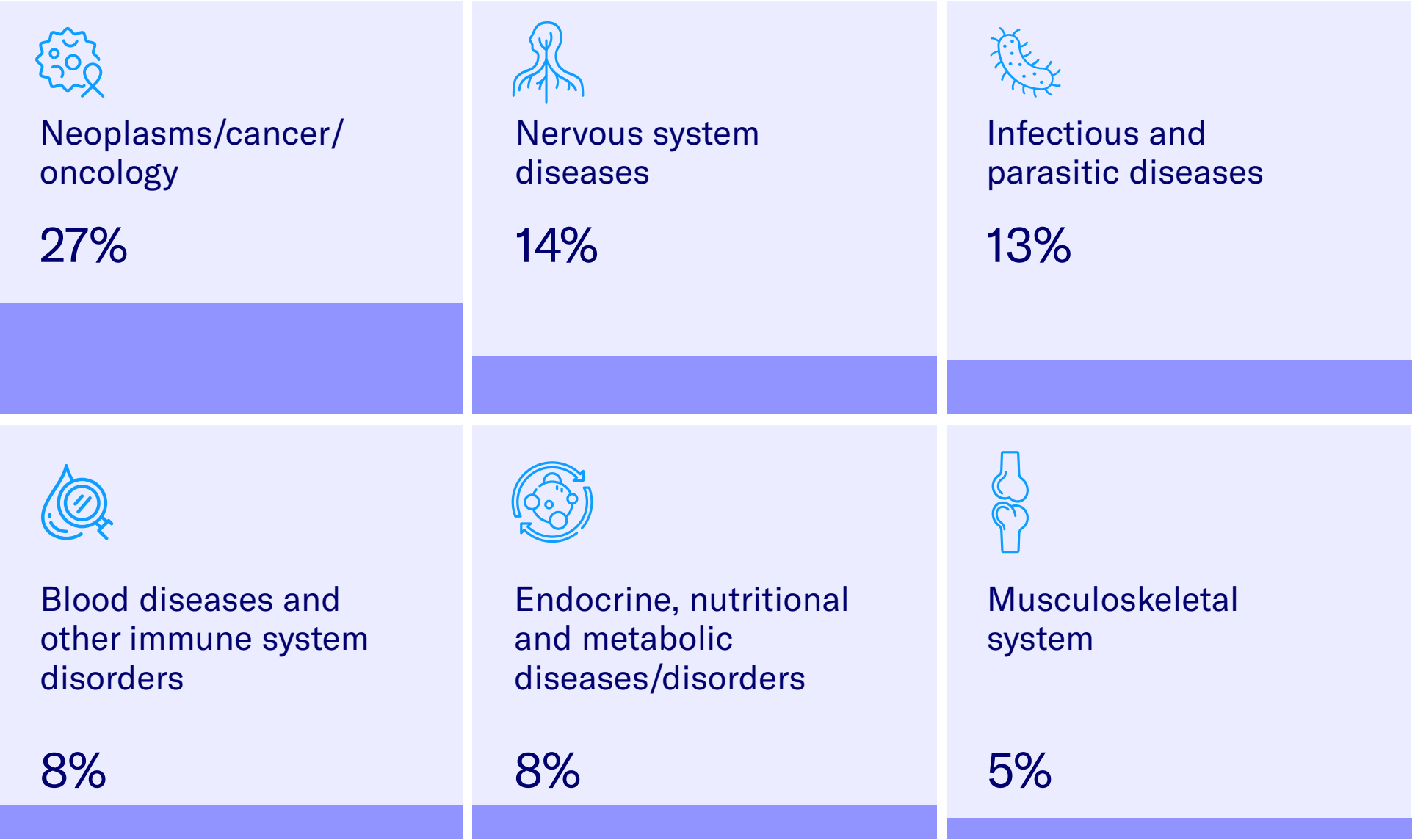


Source: Biocat

Evolution of investment (2020-2024)



Main therapeutic areas

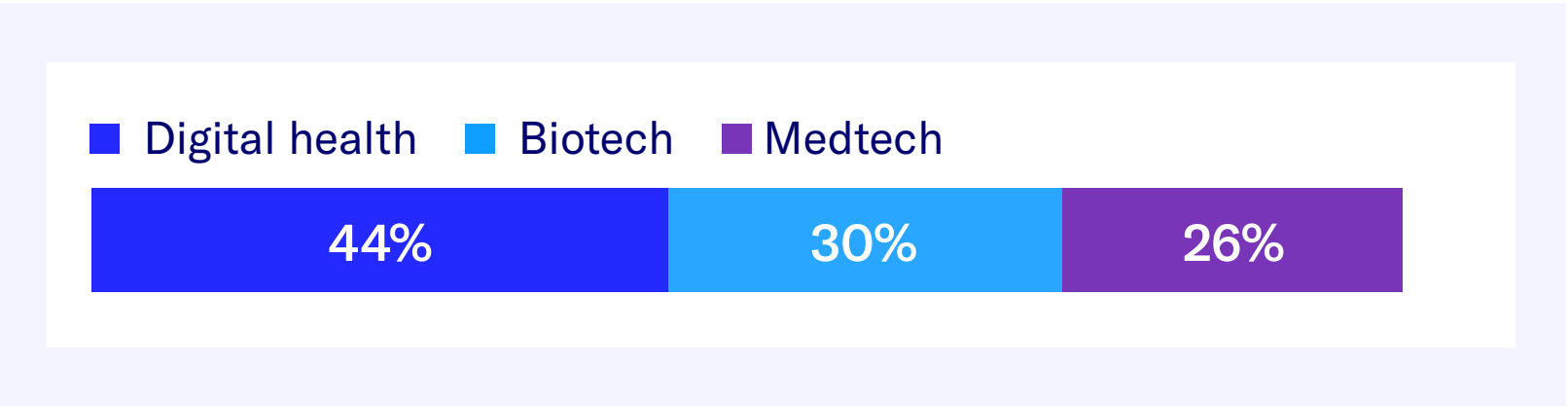


27 startups and scaleups working in women’s health in Catalonia

After a long history of stigmatisation and underinvestment, women’s health is at a turning point, with growing awareness, investment and innovation. Indeed, most of the sector’s international conferences in 2024 dedicated key spaces to this topic. Catalonia has 27 startups and scaleups developing technological solutions, advanced diagnostics and personalised services to address specifically female health needs throughout all stages of life. By work area, of note are pregnancy and maternity (26%) (Dana, LactApp and more) and sexual and gynaecological health (22%) (MiMark, Enjoy), followed by fertility (19%) (Oxolife, Lumiris, among others), wellbeing and lifestyle (11%) (Kiara), prevention and chronic diseases (11%) (The Blue Box), menopause (7%) and hormone health (4%) (FemmeUp). With regards evolution of investment, the figure of €9.7 M in 2023 and the main rounds from companies such as Oxolife (€8 M), MiMark (€7 M) and Enjoy (€4 M) were noticeable.



Types of startups and scaleups



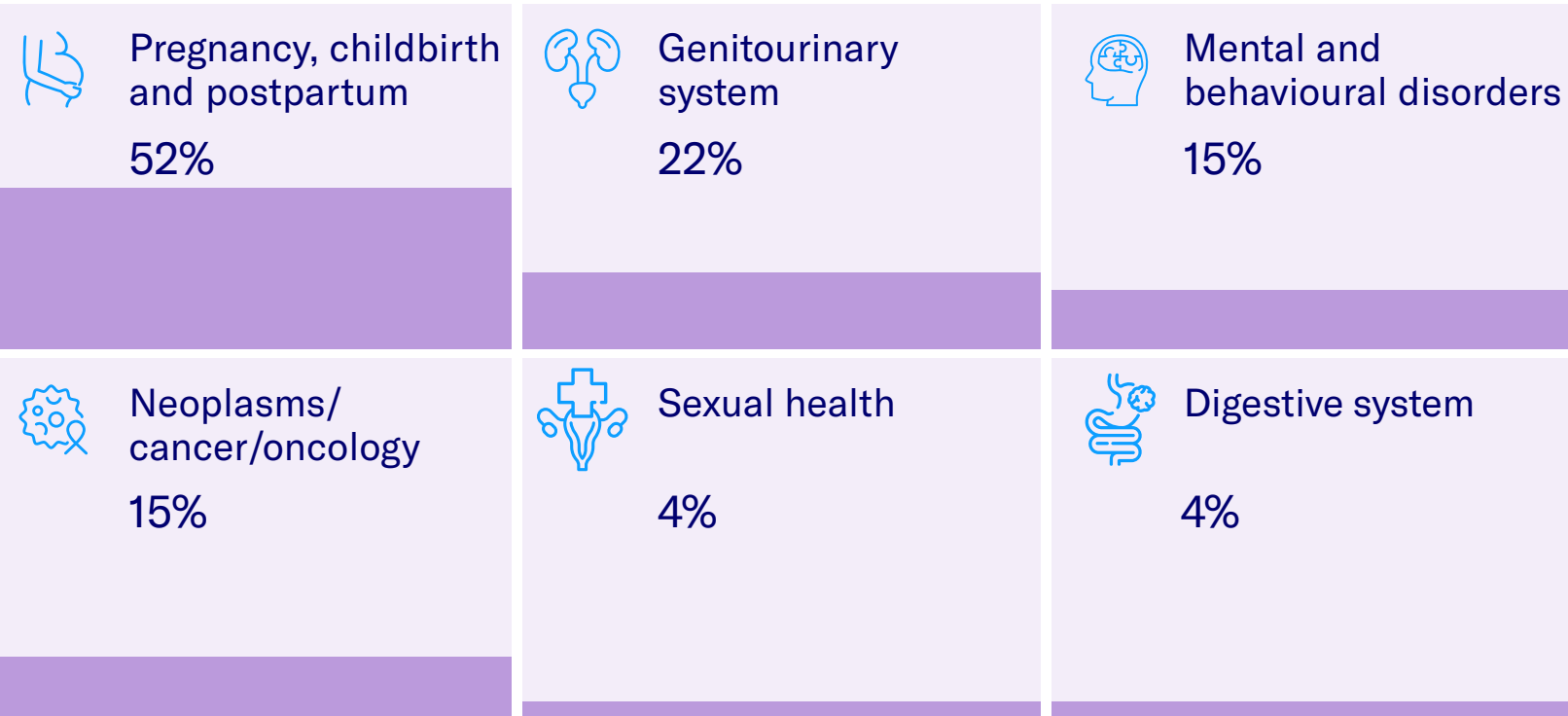
Evolution of investment (2020-2024)



Most invested startups and scaleups



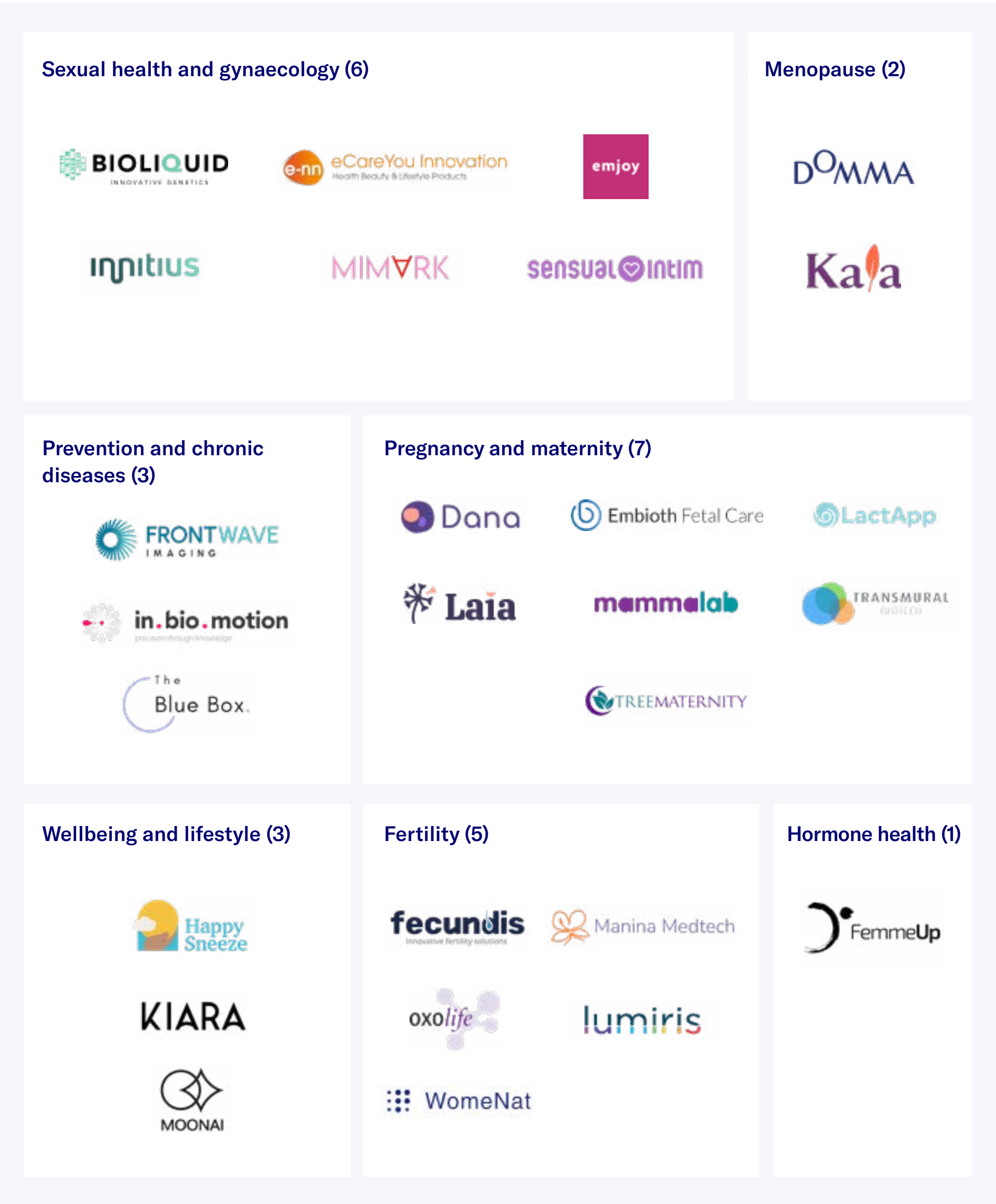
Main therapeutic areas



Source: Biocat

Note: percentages may exceed 100% if the selection allows for different responses.

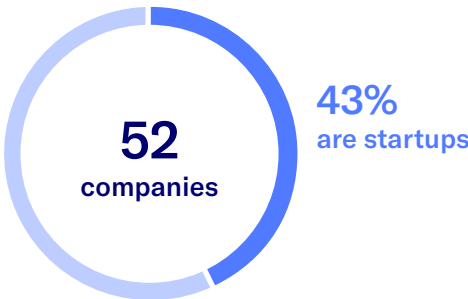
Startups and scaleups working in women’s health in Catalonia



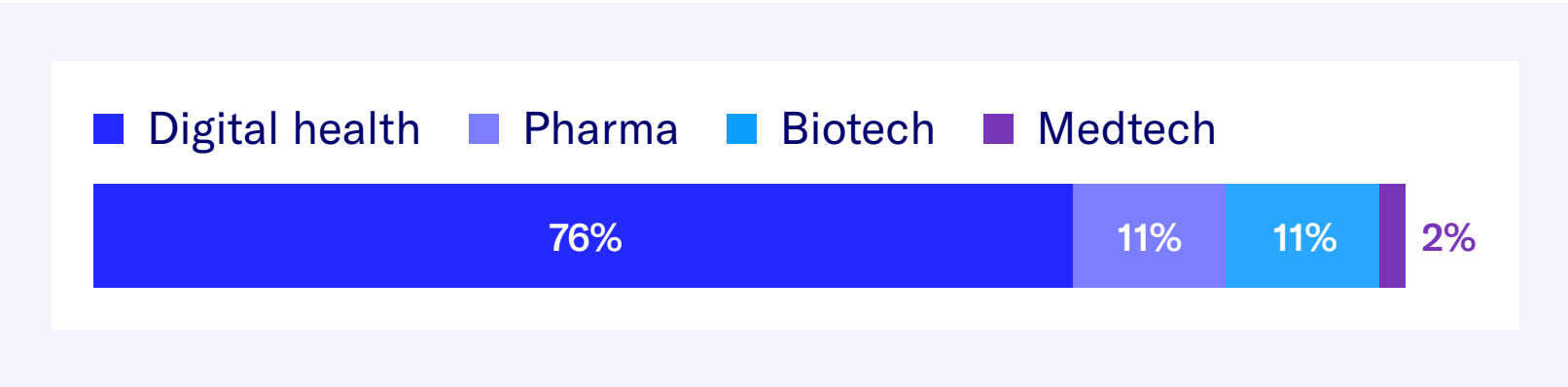
52 companies working in mental health in Catalonia

Mental health has become one of the main priorities in public, economic and social health in Europe. The EU has earmarked 1,230 million euros for the period 2021-2027, of which 765 million are focused on research and innovation projects. Catalonia has 52 companies dedicated to this field, around 50% of them created in the past 5 years. The most active fields include mental and physical wellbeing, telemedicine and brain stimulation and gamification, with solutions based on personalised digital therapies, virtual reality and advanced diagnostics. Despite the recent drop in investment, between 2020-2024 important rounds of startups such as Koa Health, XRHealth and Oliva were of note. The sector also has companies dedicated to pharmaceuticals and nutraceuticals, with collaborations with global leaders such as AB-Biotics, Johnson & Johnson, Ferrer and Oryzon, among others.

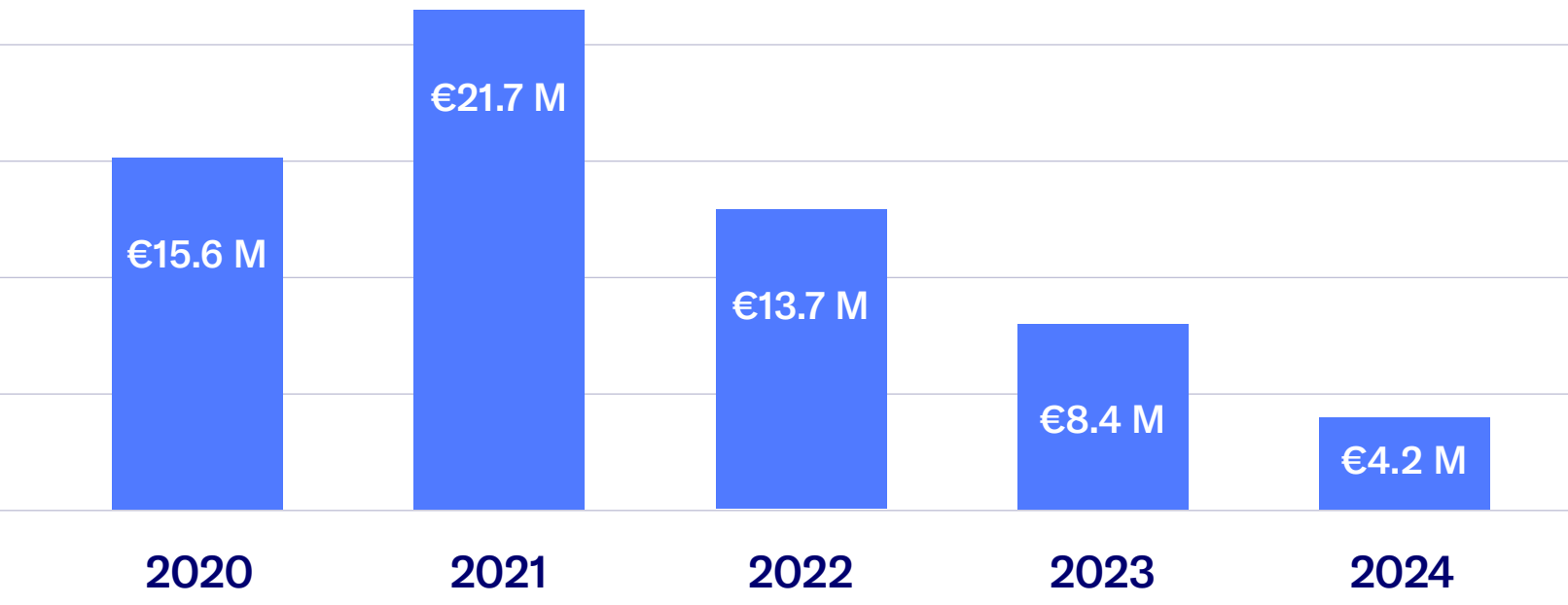
Companies working in mental health in Catalonia ↘



Types of companies



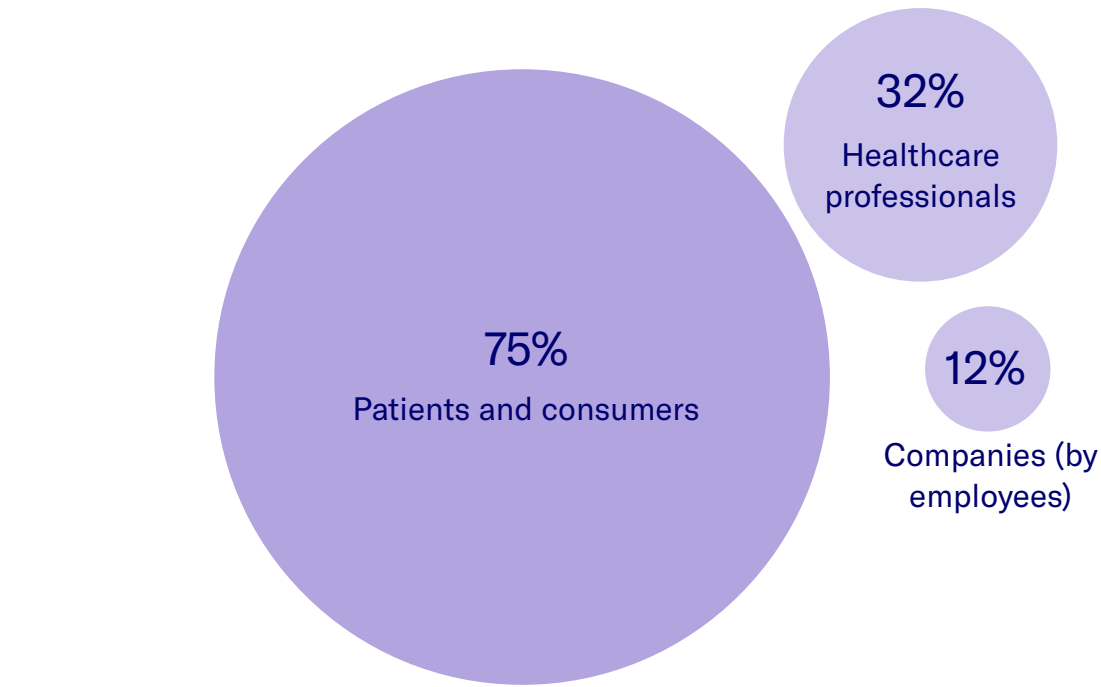
Evolution of investment (2020-2024)



Most invested startups and scaleups



Type of mental-health company customer



Source: Biocat
Note: percentages may exceed 100% if the selection allows for different responses.

Companies working in mental health in Catalonia

Mental and physical wellbeing (10)

3Dthinks

AYO

broomx

Colors

Dana

eB²

e⁻Y⁻m⁻e⁻

lumina

MEDITACAL APP

Moonea^{DTx}

Chatbots (2)

AiMA

miinta

Workplace emotional wellness (4)

emocional

oliva

Qualud

Terap.me

Diagnostics (4)

acceXible

betaScreen

eHealthAI

MetrikaMind

Brain stimulation and gamification (8)

AUTISMIND^{DTx}

Braingaze

neuroelectrics^{DTx}

MOONAI

nen

NEUREKA LAB

neurocenter

MENTAL ID

Clinical management (3)

eholo

kamina

XRHealth

Telemedicine (6)

aimentia

Koa Health

LactApp

nuna

psonrie

somos estupendas.

Virtual reality therapy (4)

Nixi For children

Reality telling

VRPharma

XRHealth

Pharmaceuticals and nutraceuticals (11)

AB-BIOTICS

Boehringer Ingelheim

ferrer

Johnson&Johnson

LESVI

NEURAXPHARM

Lundbeck

ORYZON

Otsuka

STALICLA

Superlativa

Uriach

DTx Digital therapeutics

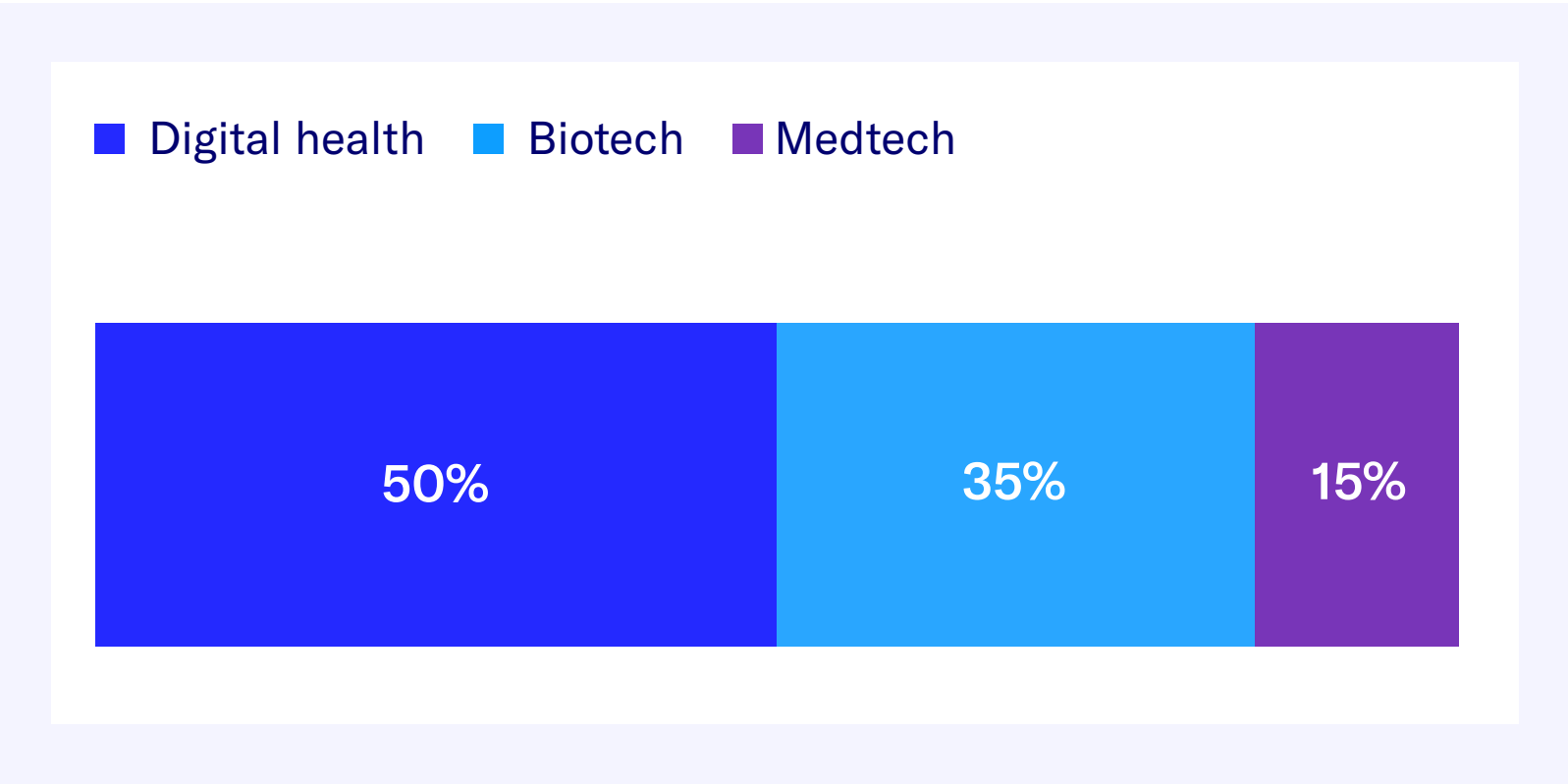
17 startups and scaleups working in paediatric health in Catalonia

Catalonia has a growing number of child-health-focused startups and scaleups, with 17 startups working in paediatrics across the BioRegion. The fields with the most companies working in them are diagnostics and therapeutic treatments, although there has also been activity in brain stimulation and gamification, virtual therapy and telemedicine. In terms of investment, 2020 and 2022 delivered 90% of the investment, due to the rounds of Minoryx Therapeutics (€80 M), which develops treatments for rare neurodegenerative diseases. The other two most invested-in startups over these 5 years were Kriba (€7 M), which screens, diagnoses and performs noninvasive follow-up of childhood meningitis, and Connecta Therapeutics (€5 M), focused on neurodevelopmental disorders.

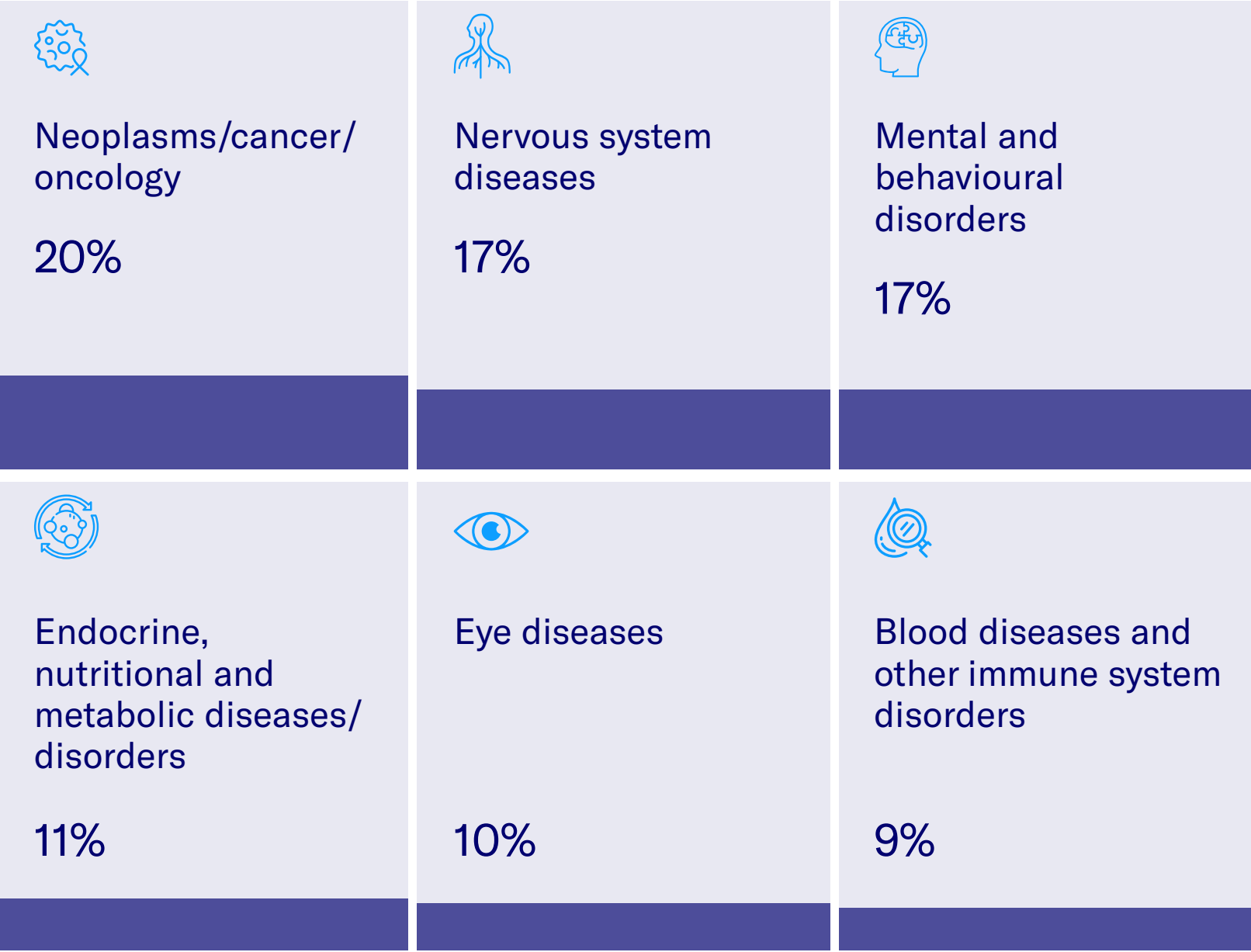
Finally, we would mention two initiatives promoted by the BioRegion: the SJD Pediatric Cancer Center and Xarxa Únicas, two key projects for the development and growth of innovative solution in this field.



Types of startups and scaleups

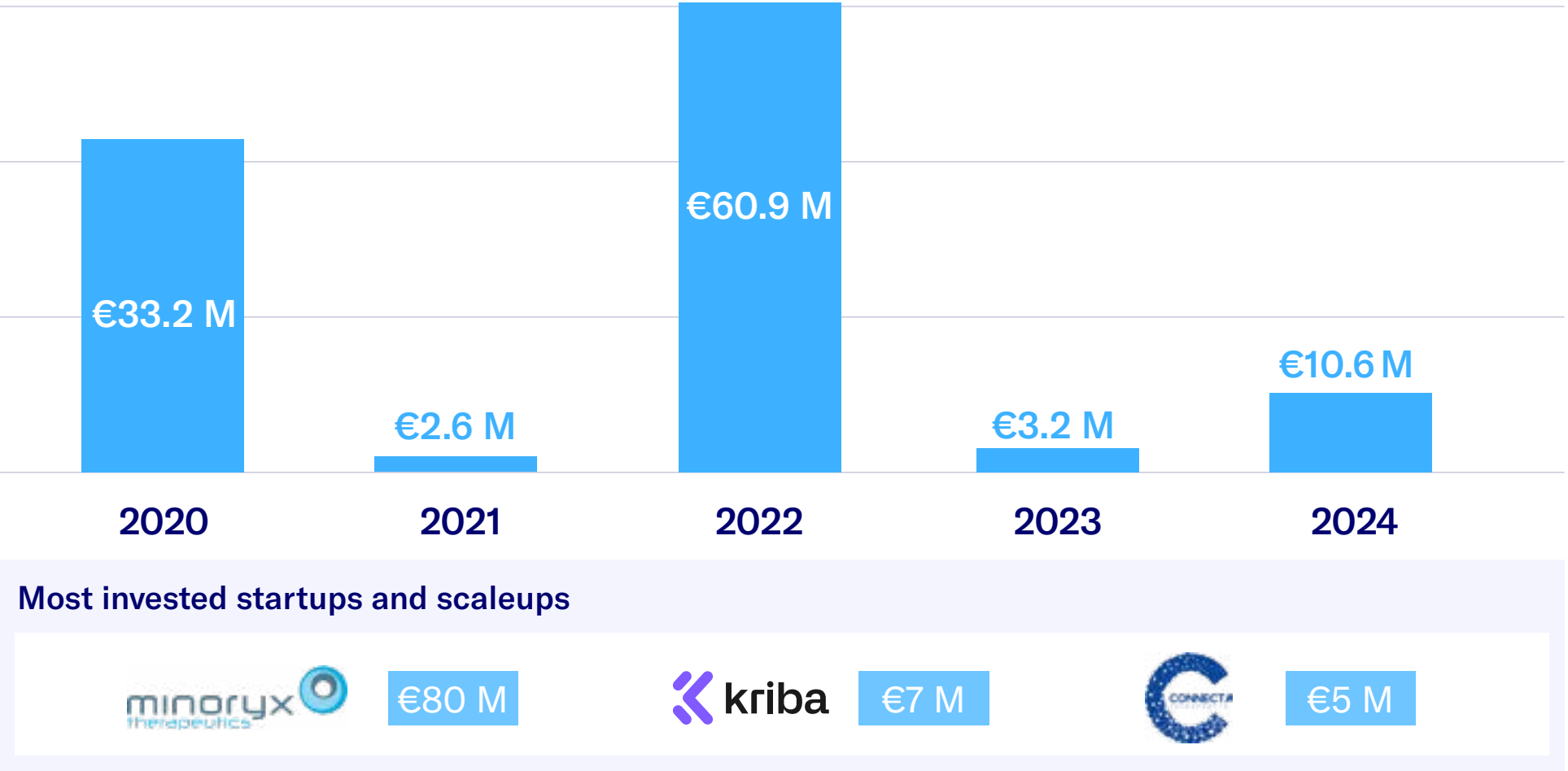


Main therapeutic areas



Source: Biocat

Evolution of investment (2020-2024)



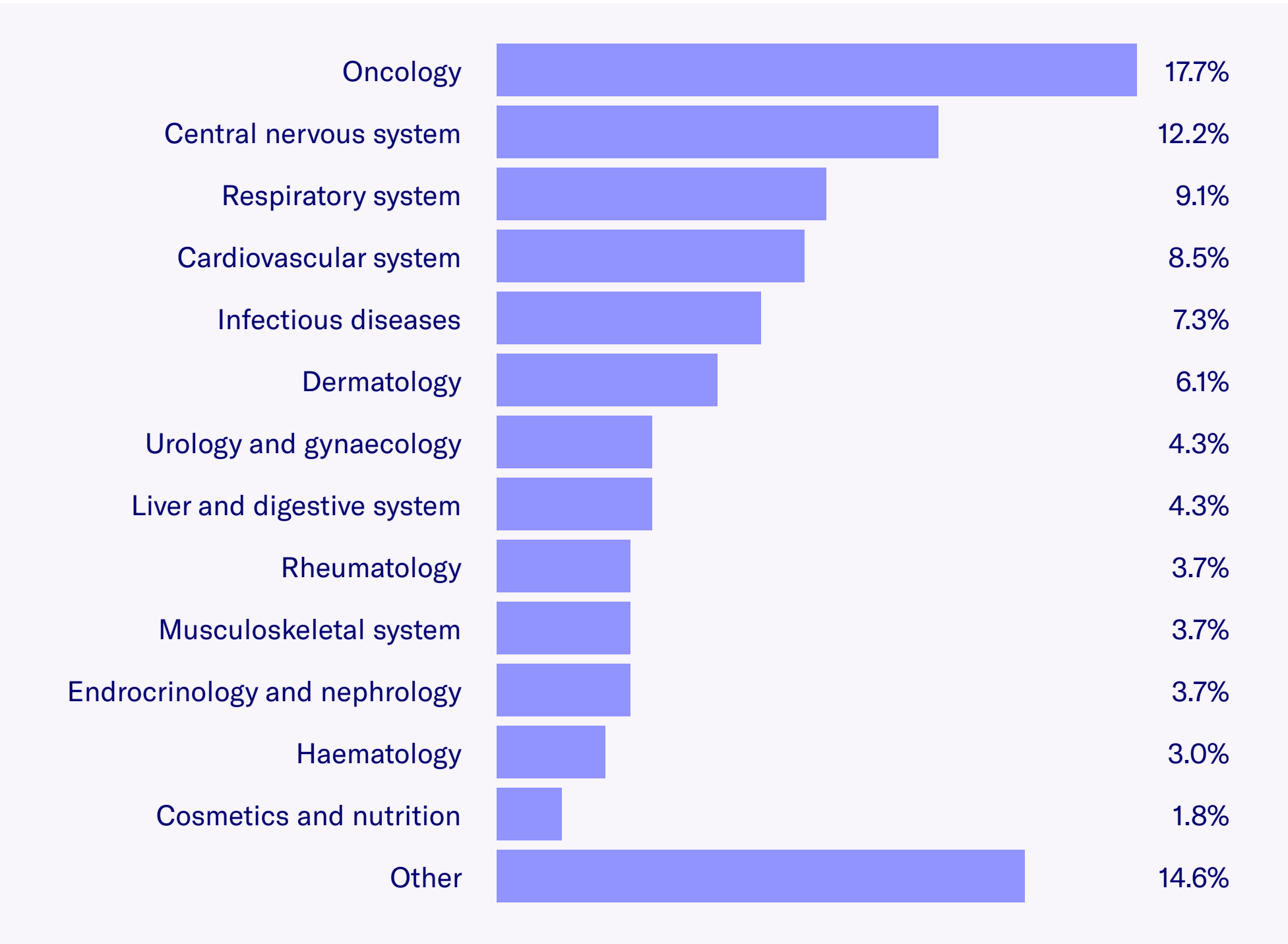
Startups and scaleups working in paediatric health in Catalonia



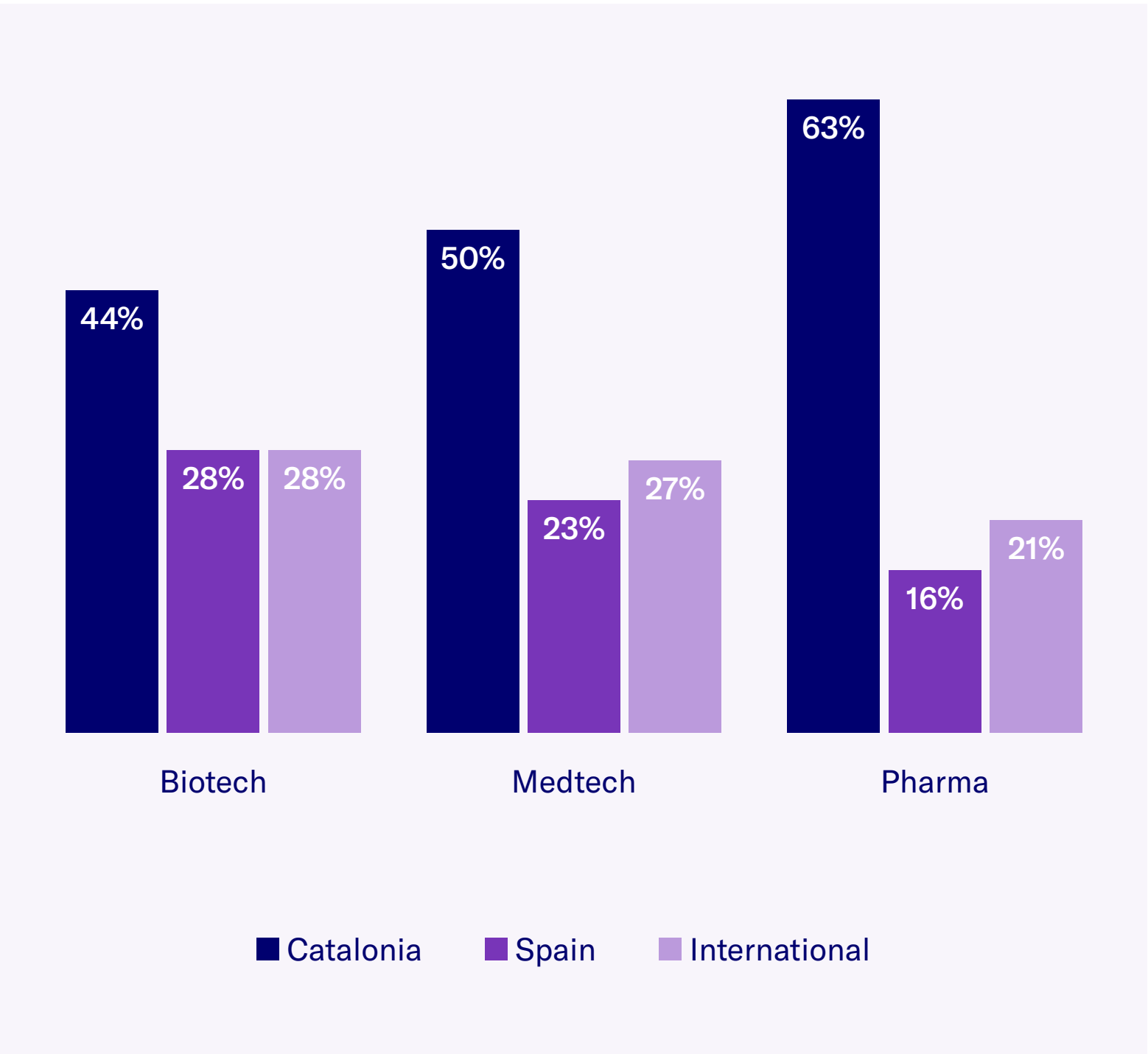
Investment in R&D and corporate collaborations

Catalonia.Health, in collaboration with the consulting firm EY, conducts an annual survey* of its member companies to analyse the investment strategies, objectives and challenges they face. The analysis reflects a consolidated trend, as well as new dynamics in R&D investments and collaborations in the health sector. The therapeutic areas with most investment were oncology (18%) and the central nervous system (12%), followed by the respiratory system (9%) and the cardiovascular system (8%). In terms of geographic distribution, most R&D investment was concentrated in Catalonia, while international R&D investment ranged between 21% and 28% across all business segments. With regards partnerships, biotech companies prioritised alliances with academic and hospital environments (77% of agreements), a key element for technology validation and transfer. For their part, medtech companies stepped up their partnerships with micro-enterprises and SMEs, consolidating a model of agile innovation. The pharma subsector, by contrast, maintained a balance of alliances with different types of stakeholders. Finally, 56% of polled companies are actively seeking new partners, demonstrating the BioRegion’s dynamism and high level of activity in terms of collaborative innovation.

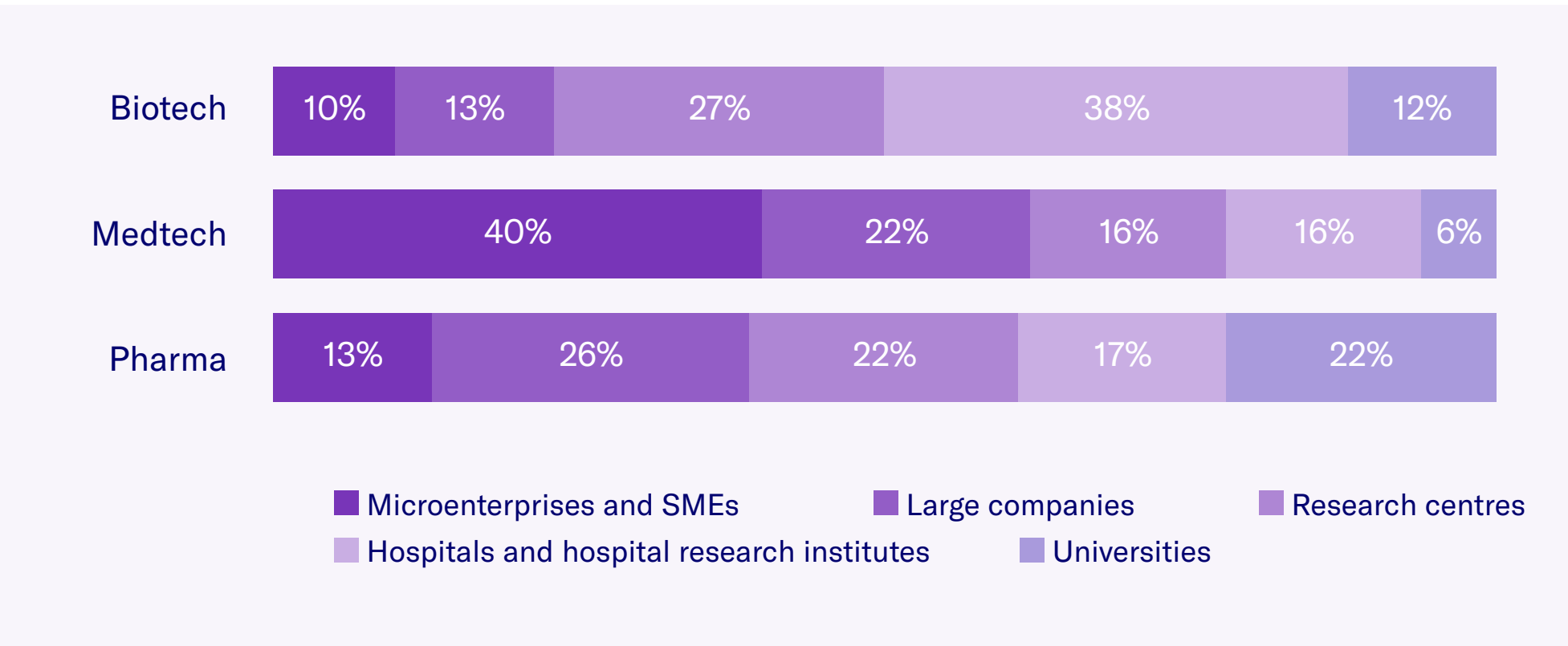
Distribution of R&D investment by therapeutic area ↘



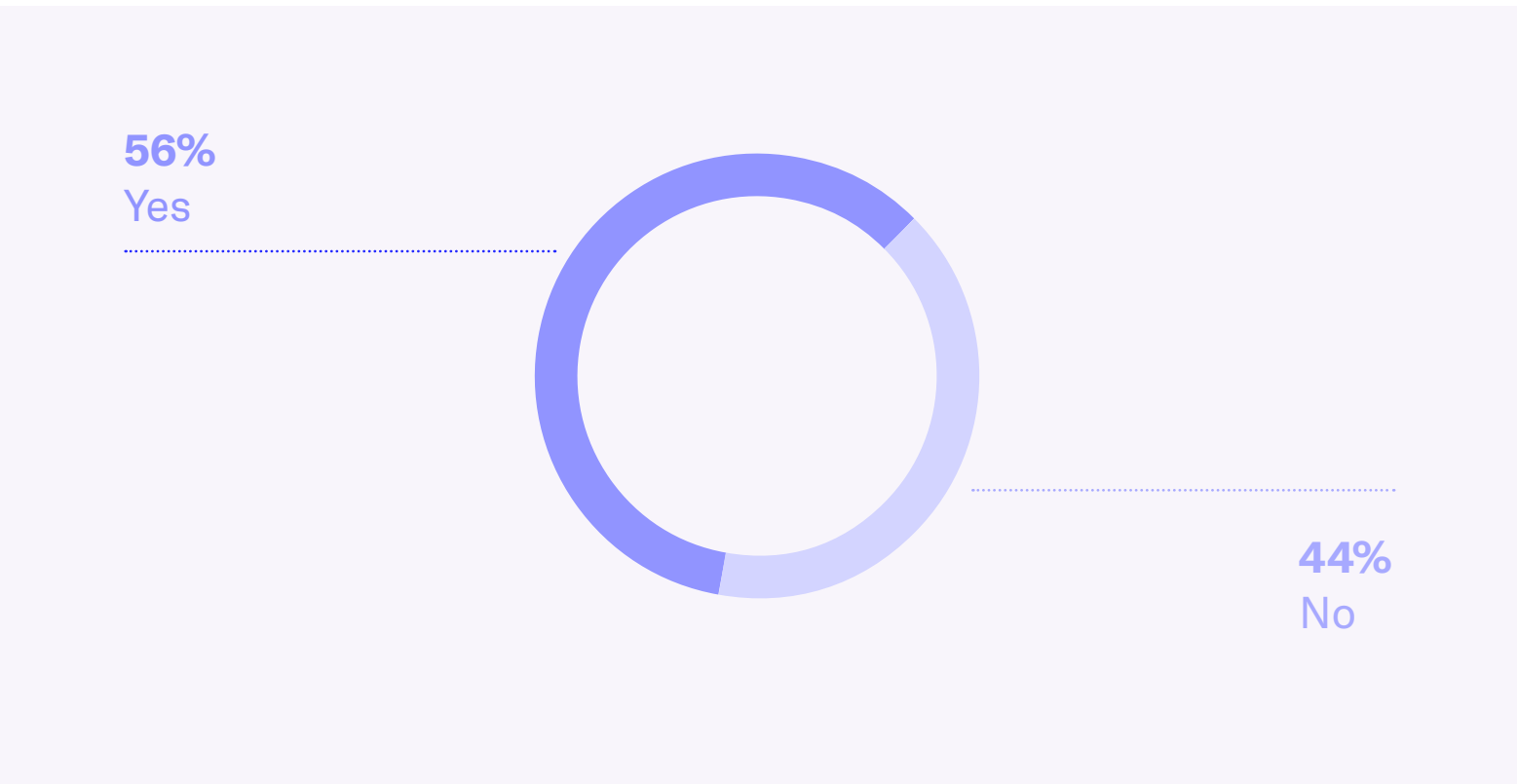
Geographic distribution of R&D investment ↘



Distribution of collaboration agreements by partner type ↘



Companies seeking partners to develop or market their innovations ↘



* Survey of companies associated with CataloniaBio & HealthTech 2023

4

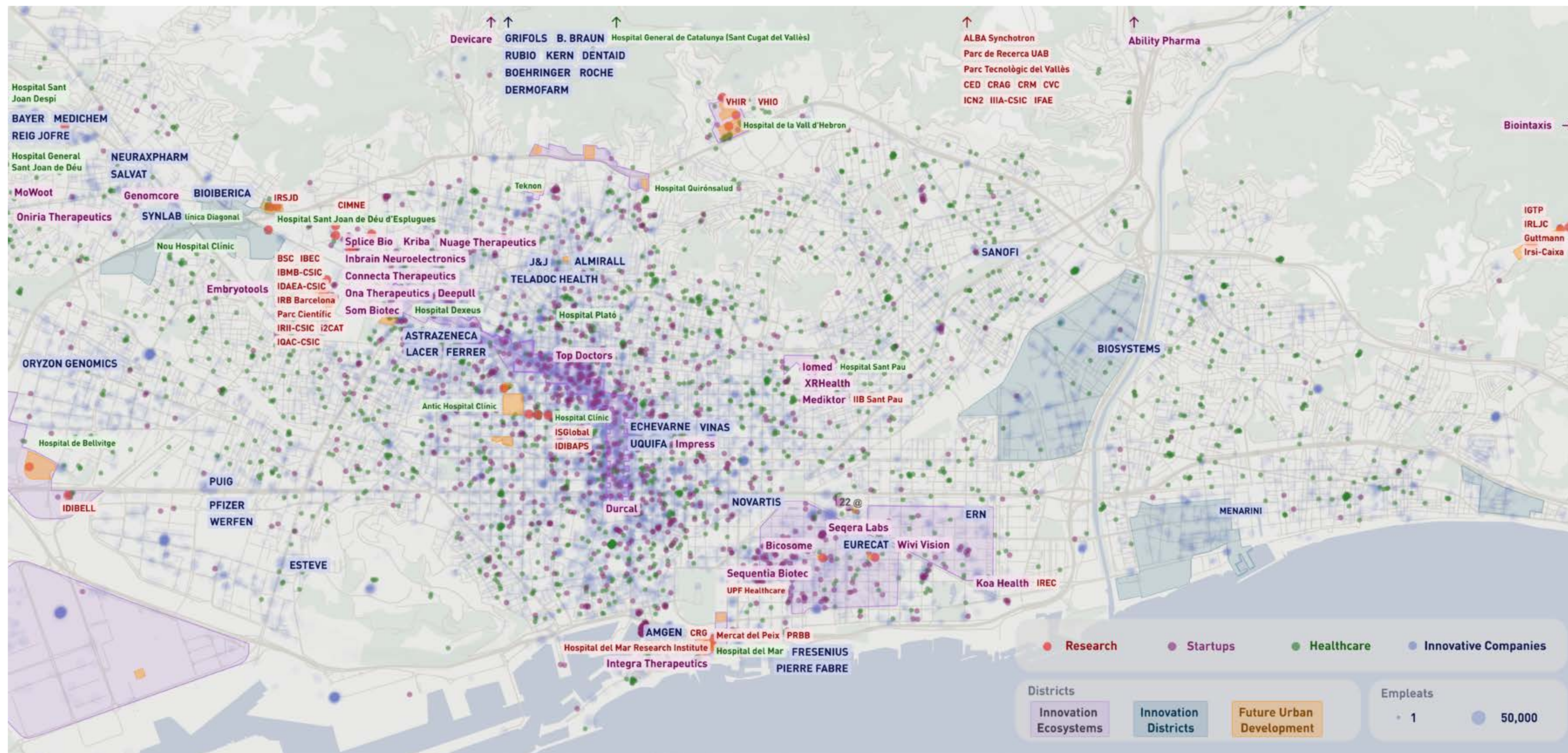
Current and future health innovation hubs in Barcelona

ARETIAN
Urban Analytics and Design

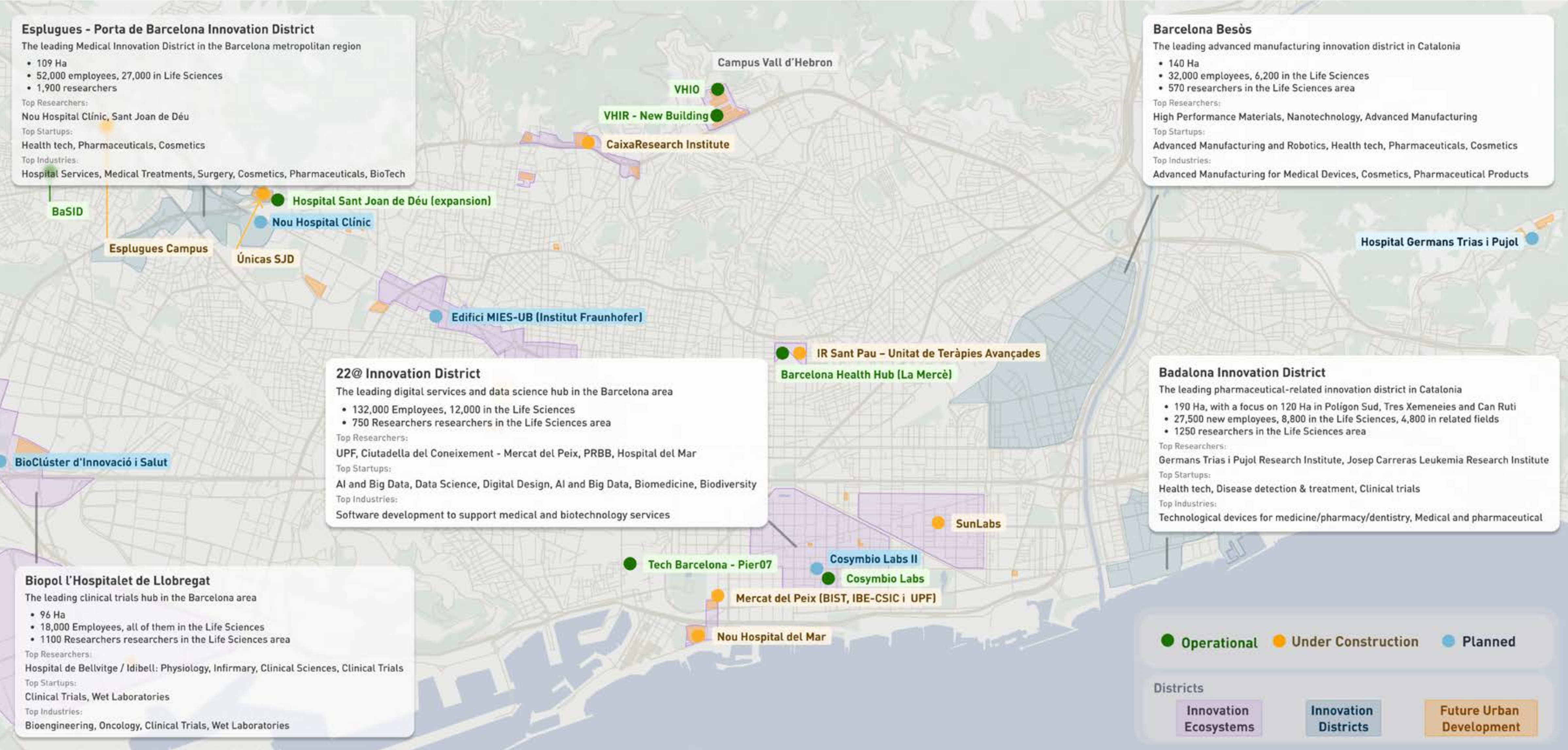
With the collaboration of: Aretian



Current concentration of life sciences innovation hubs in Barcelona



Projected future concentration of life sciences innovation hubs in Barcelona



Methodology and Acknowledgements

The BioRegion of Catalonia Report is the **reference publication on the life sciences and healthcare sector in Catalonia** that **Biocat has been publishing since 2009**. The 2024 document is the **10th edition of the Report**, consolidating a name for itself as a strategic instrument for analysing ecosystem evolution, identifying trends and facilitating decision-making by institutions, companies and professionals. All the publications are available at biocat.cat/en/publications.

The report is based on data from the **Biocat Directory** ([Catalonia Health & Life Sciences Data Platform](#), which includes information on more than **1,900 companies and entities active** in life sciences and healthcare innovation in Catalonia. The data is crossed with the Biocat CRM, which collects information from more than 12,000 entities and 36,000 contacts, guaranteeing a robust and up-to-date analysis.

For a detailed description of the subsectors analysed, i.e., biotechnology, pharmaceuticals, medical technologies and digital health, please see the definitions in the pertinent Directory website section. The **financial and human capital indicators are taken from the Sistema de Anàlisi de Balanços Ibèrics (SABI)** analysis system, based on the latest available annual accounts (2023). The analysis includes only companies with **registered offices in Catalonia**, ensuring an accurate measurement of the local economic impact. The methodologies for calculating the weight of the sector on GDP can be consulted in the 2017 [BioRegion Report](#). For **foreign direct investment projects, the data comes from the collaboration with ACCIÓ**, and the methodology used is detailed in the “[Foreign Investment in Catalonia Report 2023](#)”.

The analysis of investment in startups and scaleups is based on exhaustive monitoring by the Biocat Business Intelligence Unit of emerging and innovative companies in the defined subsectors. The data includes **private capital, public instruments and formal investment vehicles**, with information collected directly from the companies, as well as from recognised sources such as press releases, investment databases and the financial press. The international investment analysis was performed with a **licence from Dealroom**, a leading platform for data on innovation ecosystems in Europe. The **concept of a startup** includes emerging companies in the early stages of their development that have obtained competitive and venture capital funding, while the **concept of a scaleup** refers to mature startups that have grown significantly, either through investment, product extension or market expansion.

The analysis of **competitive funding in European projects** was prepared with data from the European Commission’s Horizon Dashboard. The Report also considered Horizon 2020-Horizon Europe projects (coordinated and participated in) signed between 2019 and 2023 with EuroSciVoc codes (Medical & Health Sciences; Biological Sciences; Medical Engineering) and thematic priorities (Biotechnology; Health; Health, Demographic Change and Wellbeing).

The **analysis of scientific production** was carried out using data from the Science Citation Index-Expanded (Clarivate) and included articles, reviews and conference proceedings indexed in the life sciences and healthcare Web of Science (WoS) categories. The study was complemented by an **analysis of the most outstanding active researchers**, taking into account the percentage of Highly Cited Papers (HCPs) in WoS categories and researchers with more than 70 publications between 2019 and 2023. Researchers with fewer publications but who appeared in Clarivate’s annual Highly Cited Researchers ranking were also included. The indicators further included the position of researchers in the Stanford 2024 ranking, which identifies the top 2% of the most cited scientists worldwide, assessing their impact according to metrics such as cumulative citations, H-index and co-authorships, with data from Scopus.

The **patent analysis** was performed with data from PatentScope (WIPO), considering publication date, applicant country and International Patent Classification (IPC) codes in life sciences and healthcare. The **scientific publications and patents in advanced therapies** indicators were updated with respect to the previous Report and offer a comparative view with countries of similar socioeconomic characteristics (European, democratic, populations between 5 and 20 million inhabitants).

The **healthtech pipeline analysis** was carried out in collaboration with **Fenin** (Spanish Federation of Health Technology Companies) from a survey of 90 medical-device and digital-health companies active in Catalonia.

The last chapter is the result of a collaboration with **Aretian Urban Analytics and Design**, specialised in data-driven urban analysis and design, which provides a perspective on the territorial dynamics of the health ecosystem in Barcelona.

For more information on the indicators and methodologies used in this report or to request the updating of an entity’s details, please email the **Biocat Business Intelligence** department, which is responsible for the conceptualisation, preparation and publication of each report: businessintelligence@biocat.cat.

Finally, we would like to **thank all the professionals from entities both public and private**, national and international, who collaborated by providing their data and/or the information we sought. Their contributions have been essential in preparing the analyses and conclusions presented in the Report.



2024 BioRegion of Catalonia Report

report.biocat.cat | [#BioRegionReport](https://twitter.com/BioRegionReport)

biocat.cat | comunicacio@biocat.cat

Barcelona, December 2024

Gold Sponsors:



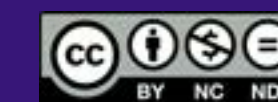
Silver Sponsors:



With the collaboration of:



Biocat



The contents of this document are subject to a Creative Commons license. Unless otherwise indicated, reproduction, distribution and public communication are permitted provided that the author is acknowledged, no commercial use is made and derivative works are not distributed. A summary of the terms of the licence can be found at: www.creativecommons.org/licenses/by-nc-nd/4.0/