

# State of Medicon Valley 2023



Photo: News Oresund – Johan Wessman

Medicon Valley Alliance

# Contents

- 1. Foreword**
- 2. Executive summary**
- 3. Spotlight on Medicon Valley and value of life science exports**
- 4. Medicon Valley biopharma activity**
  - Drug development
  - Clinical trial trends
  - Deal-making overview
- 5. European life science cluster comparison**
- 6. Faces behind some of the great innovation in Medicon Valley**



## Foreword

There is no doubt that the significance and impact of the life science sector in both Denmark and Sweden has been on the rise for several years and is still increasing in terms of exports, tax revenue, attractive jobs, etc.

Our cross-border region, Medicon Valley, is the largest life science region in the European Union in terms of number of jobs, but of course, we are also interested in being the leading in so many other ways.

On a daily basis, we see the value of joining forces in our cross-border Swedish-Danish life science region. Even if we are the largest region in the EU, we are just a dot on the world map. However, through collaboration and joining forces bi-nationally, in the EU and globally, we can increase our competitiveness by strengthening and creating new strongholds, achieving a greater impact and better ranking on world-class research, innovation, and making Medicon Valley an attractive hub for life science researchers, entrepreneurs, companies and investors.

Medicon Valley Alliance being a triple-helix, member-driven life science organisation with mission of strengthening the eco-system in Medicon Valley through networks, events, analysis, promotion and strategic projects, we are happy to present this brand new analysis and benchmarking of our region towards other prominent life science regions in Europe – displaying promises of an even brighter future for the life science sector.

Enjoy the read & kind regards

Anette Steenberg  
CEO – Medicon Valley Alliance

**Medicon Valley Alliance**

## Executive Summary

In close collaboration with Citeline, who has conducted the analysis, we have decided to zoom in on:

- Drug development pipelines
- Clinical trials conducted
- Investment
- Partnering statistics

Combining it with a benchmark comparison with other leading European life science clusters:

- Pipeline size
- Number of companies actively developing products
- Ongoing and planned number of trials
- Number of financing rounds

### **Key findings of Medicon Valley are:**

- An attractive maturing pipeline and biggest ever
- A diversified and balanced pipeline
- Metabolic/Endocrinology pushes aside oncology as the dominant disease area in trials
- A flourish start-up scene
- Investment has bounced back strongly in 2023, despite the continued global downturn within biotech
- 13 partnerships signed Q1+2, matching previous years, however, with values of a four-fold increase on 2021+22
- Medicon Valley ranks #1 of life sciences clusters in the EU on several account

# Spotlight on Medicon Valley

The Danish-Swedish Medicon Valley in the Øresund Region is one of Europe’s leading life science clusters. Academic strengths on both sides of the Øresund Strait are in cancer, diabetes, and fertility research. The region is home to large, global pharma-, medtech-, and contract manufacturers in proximity to universities, hospitals, research facilities, and small companies in science parks. The region’s labor force crosses the Danish-Swedish border, and companies and researchers in both countries collaborate.

**65,500**  
regional employees in private life science companies in Medicon Valley

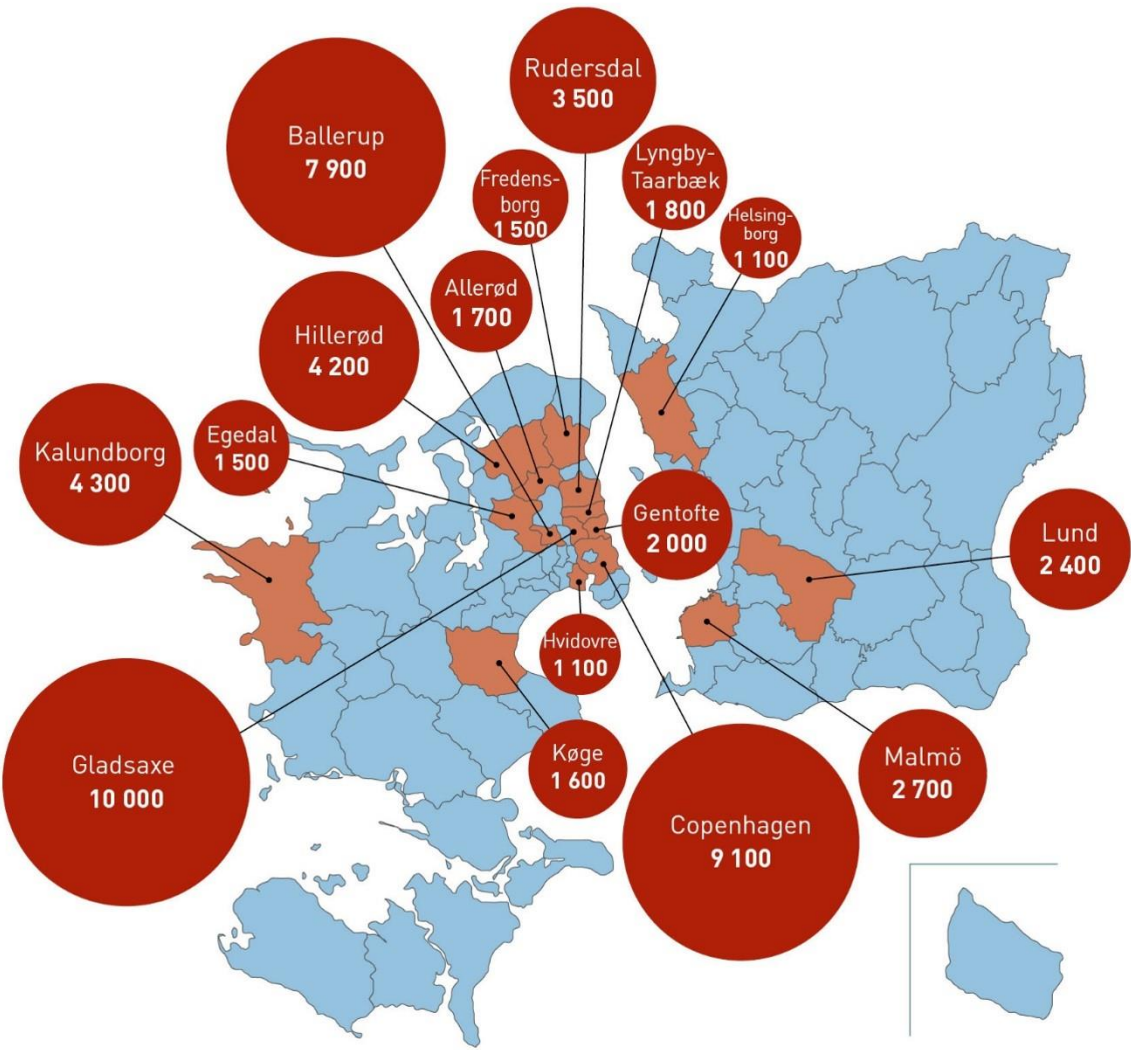
**1,150**  
life science companies identified regionally

**+300**  
new life science companies have been founded over the past 5 years - more than one new company started every week

**+12,000**  
new regional jobs created in the past five years

**900**  
border commuters identified in the sector - most commute from Skåne to eastern Denmark

**+DKK 45bn**  
in investment in Eastern Denmark now and in coming years to expand production plants, R&D facilities and other sites in the region

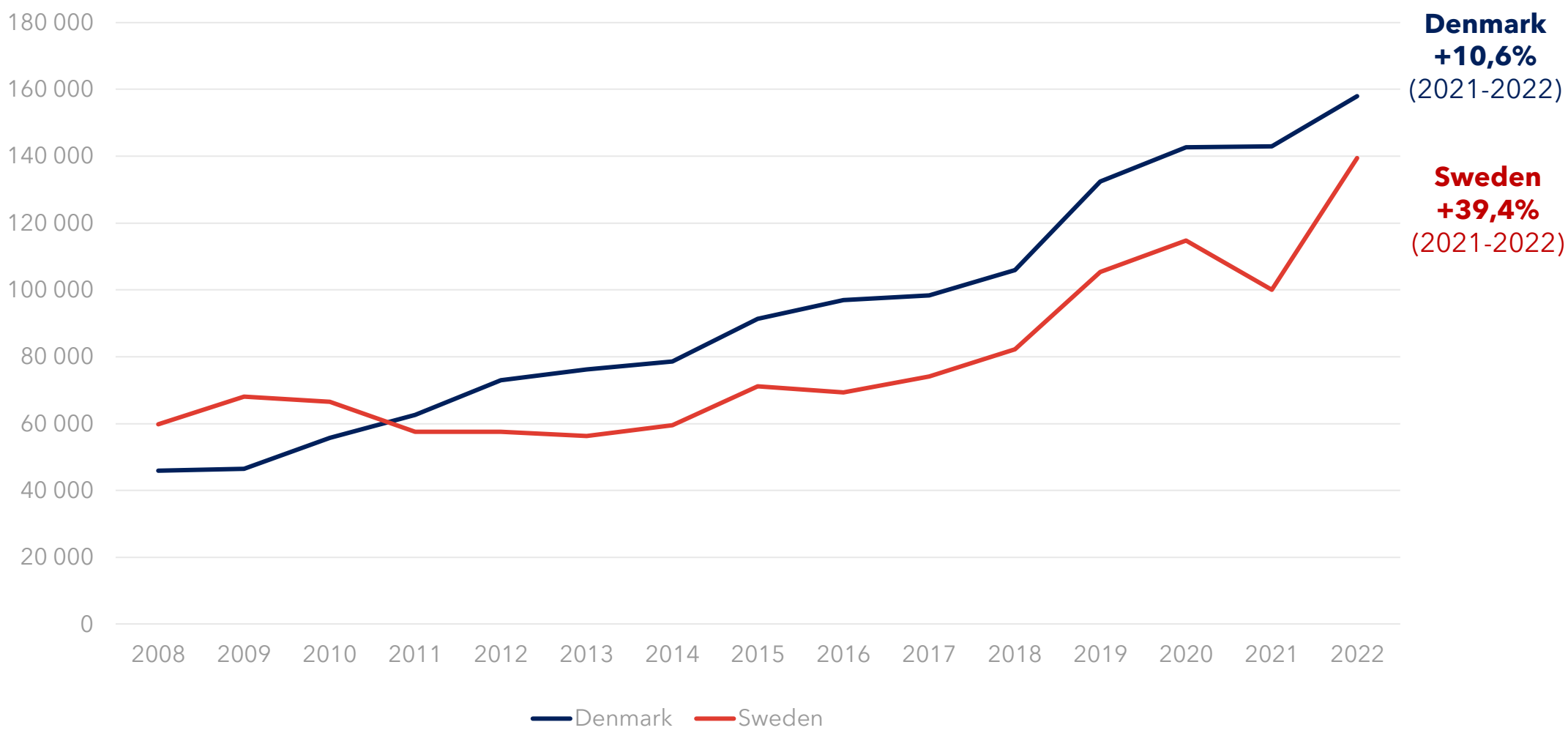


## 16 life science municipalities

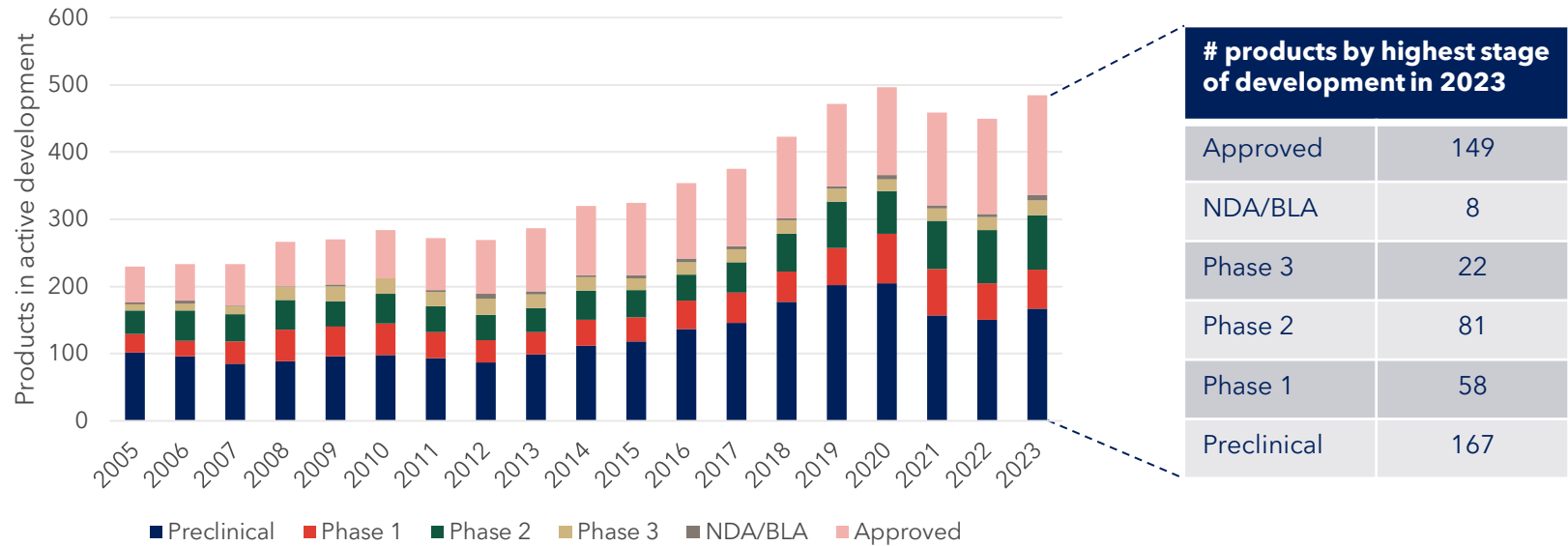
16 municipalities are particularly important for the life science sector in the Medicon Valley region, as around **86%** of the ~65,500 people employed regionally work in a company located in one of these 16 municipalities.

ØRESUNDSINSTITUTTET  
The data is based on the reports from the Greater Copenhagen Life Science Analysis Initiative: Life Science in Skåne (2020), Life Science Across the Øresund (2021) and Life Science in Eastern Denmark (2022).

# Life Science Exports in Denmark and Sweden

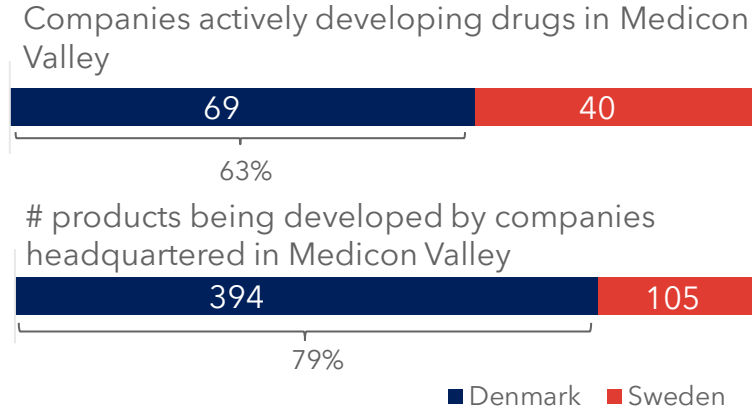


# Medicon Valley drug development



Top 5 Medicon Valley companies based on portfolio size

Novo Nordisk	104
Lundbeck	49
Leo Pharma	31
Genmab	26
ALK-Abello	14



**Maturing pipeline:** There are fewer drugs in Preclinical and Phase 1 development now than the peak in 2020 (225 Preclinical and Phase 1 drugs in 2023 vs 278 in 2020). Yet, the number of drugs in Phase 2 and 3 development is the highest it has ever been (**81** in Phase 2 and **22** in Phase 3).



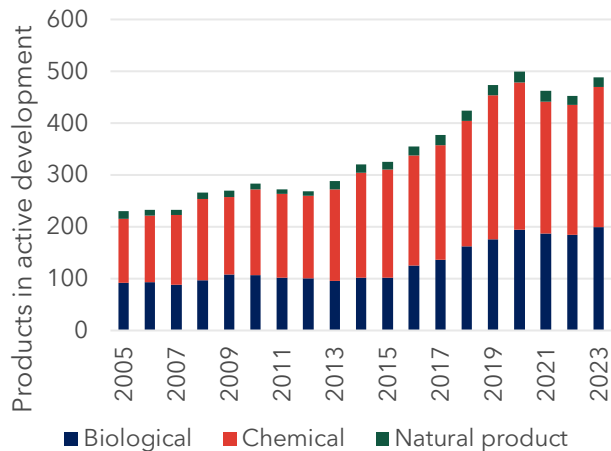
**Danish research intensely concentrated in Medicon Valley:** **84%** of Danish biopharma companies are located in the Medicon Valley, whereas only **29%** of Swedish companies are. Stockholm and Gothenburg are also centers of R&D activity. **63%** of biopharma companies in the Medicon Valley are Danish and these companies are developing **79%** of the drugs.



**Flourishing start-up scene in Copenhagen:** Copenhagen is renowned for its heavyweights including Novo Nordisk and Lundbeck, but the city is also home to an increasing number of start-ups, which include recently established Breye Therapeutics, Ousia Pharma, Zyneyro, Stimuliver and Cytoki Pharma to name but a few.

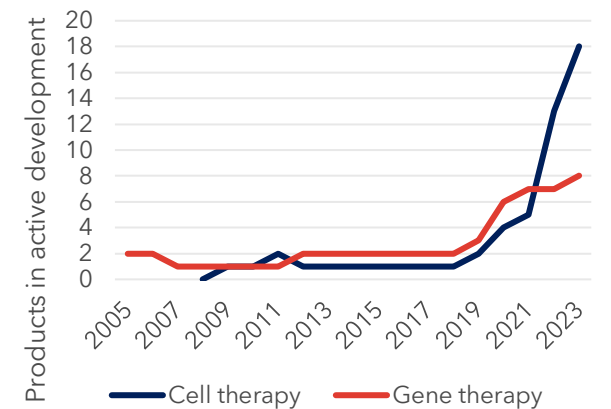
# Medicon Valley drug development

## Move towards biologics



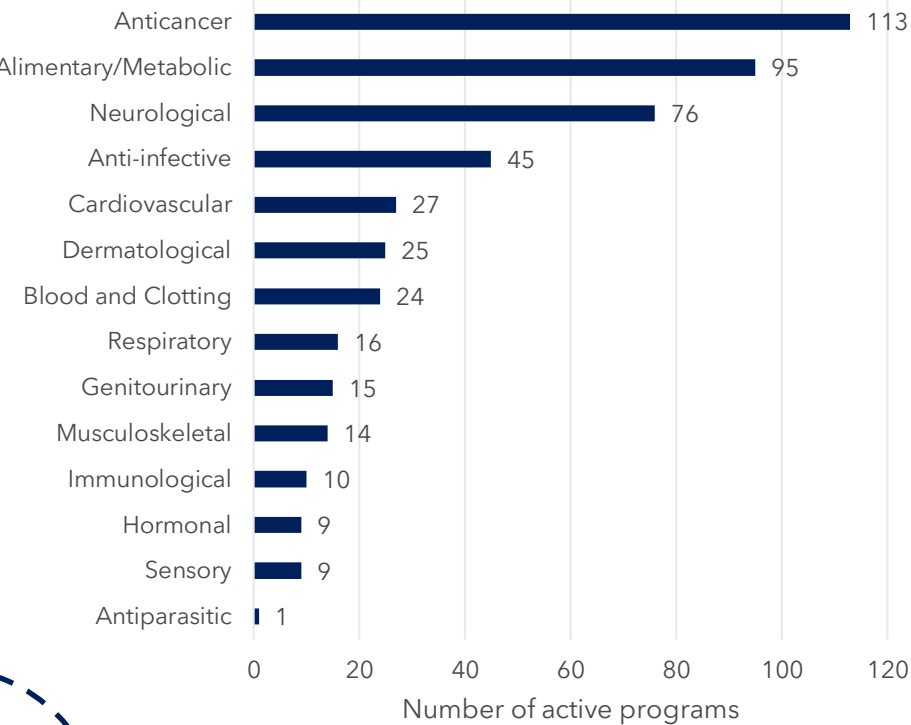
The most popular way to deliver a drug is still by the traditional chemical synthetic route, but the percentage of the pipeline which can be apportioned to biologics is continuing to creep up. It's now at **40%**, up an additional 1.8% from last year. At this rate, we might reach the tipping point where biologics become the majority towards the end of the current decade.

## Cell and gene therapy R&D expanding



The number of cell and gene therapies in development continues to increase. As of 2023, **18 cell therapies** and **eight gene therapies** are in active development. This is an increasingly important area of research, and the Swedish government, in particular, has taken a forward-looking approach and is aiming to create of position of strength here<sup>1</sup>. Swedish companies active in the cell and gene therapy space include Amniotics, Idogen and Asgard Therapeutics.

## Balanced pipeline by disease area



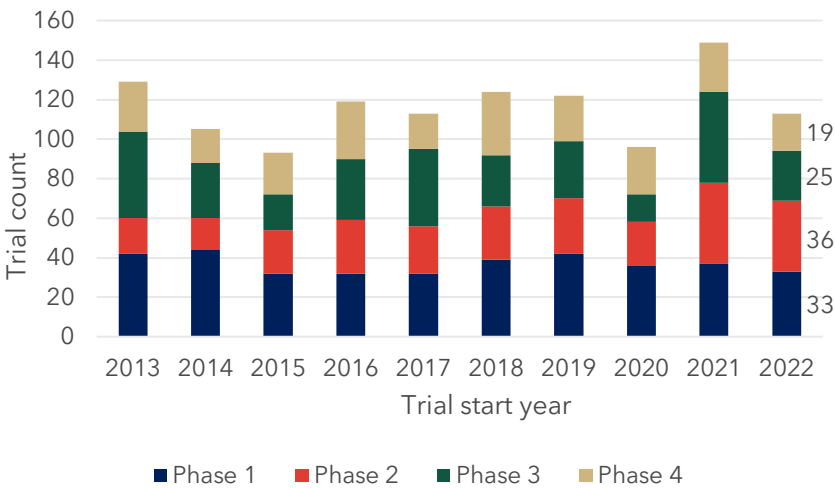
The Medicon Valley has a balanced pipeline, with all disease areas well represented. Following the global trend, cancer is the most researched area with **113** active programs. There are **95** active Alimentary/Metabolic programs reflecting strong investment in diabetes and obesity research. Novo Nordisk is well known to be very active in this area, but other players include Zealand Pharma, Gubra and Pila Pharma.



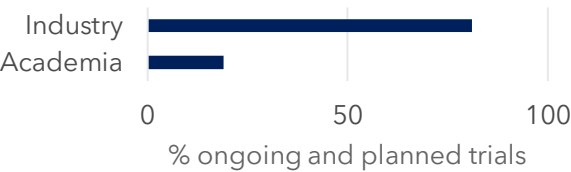
# Trials sponsored by organizations headquartered in Medicon Valley

## The number of trials has remained relatively constant

While there has been an increase in the number of drugs being developed by companies headquartered in the Medicon Valley, the number of trials sponsored by organizations located here has remained relatively stable.



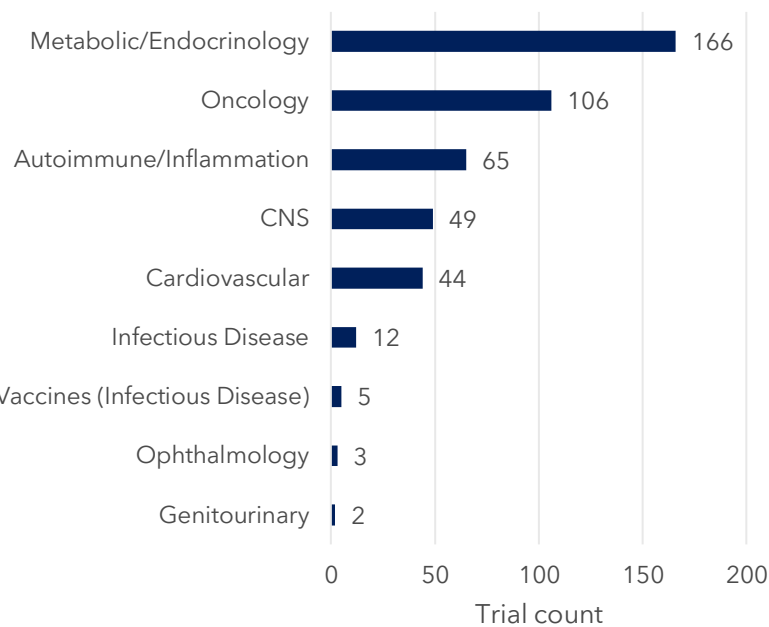
## Commercial organizations are dominant sponsors in Medicon Valley



Top 5 Medicon Valley trial sponsors based on ongoing and planned trial count



## Most ongoing and planned trials in Metabolic/Endocrinology



Currently there are **422** ongoing and planned trials sponsored by organizations headquartered in the Medicon Valley. 70 are in Phase 1, 148 in Phase 2, 115 in Phase 3 and 89 in Phase 4.



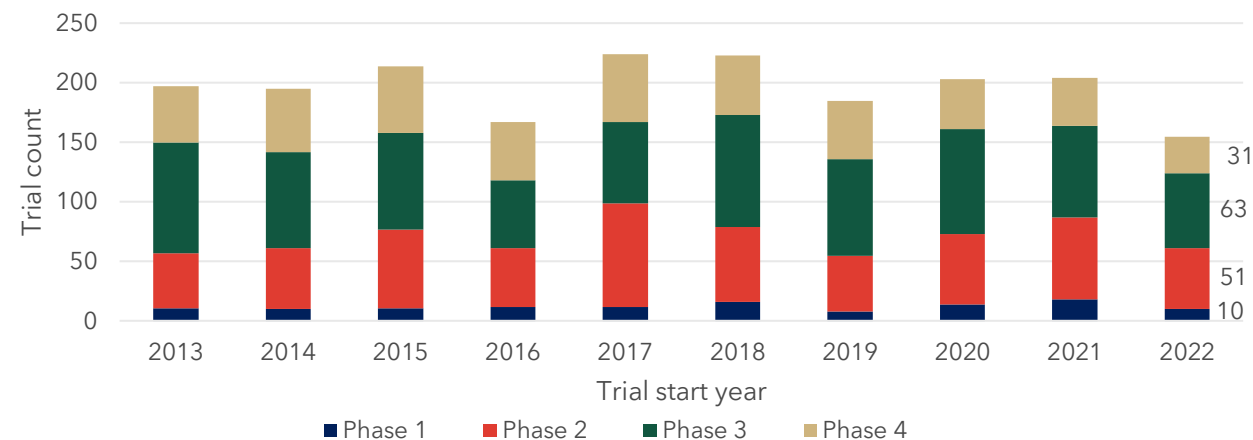
Novo Nordisk is a behemoth in the Medicon Valley, sponsoring a whopping **161** trials, but it is by no means the only player and many other organizations contribute to this dynamic ecosystem.



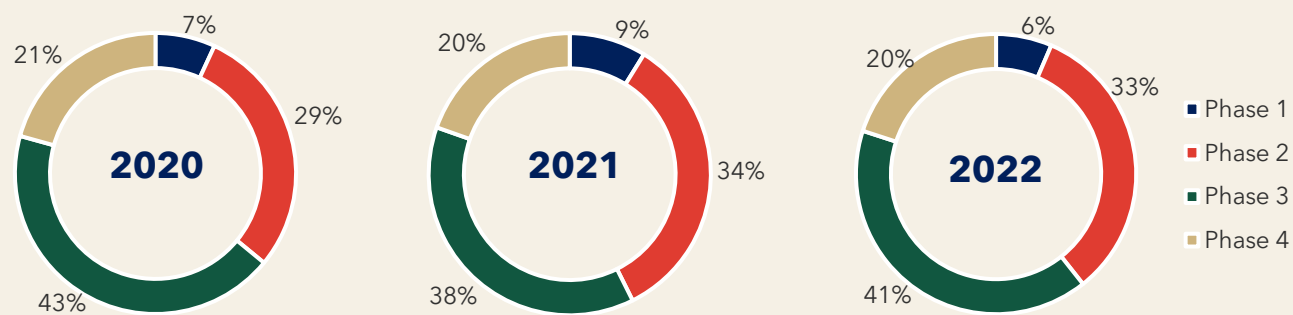
Unusually, Metabolic/Endocrinology pushes aside oncology as the dominant disease area with **166** ongoing and planned trials.

# Trials conducted at sites located within Medicon Valley

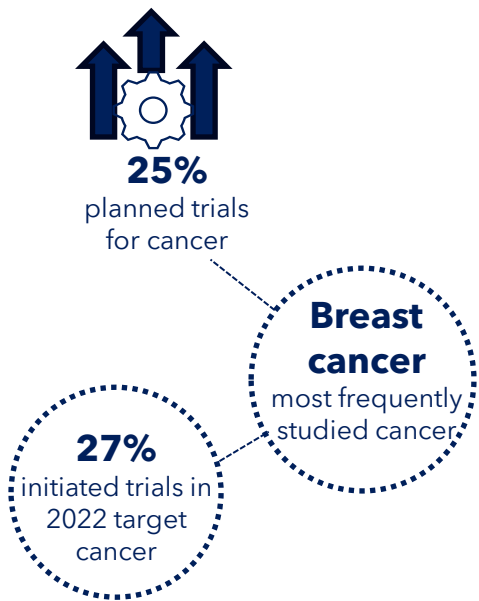
## High proportion of mid- and late-stage trials



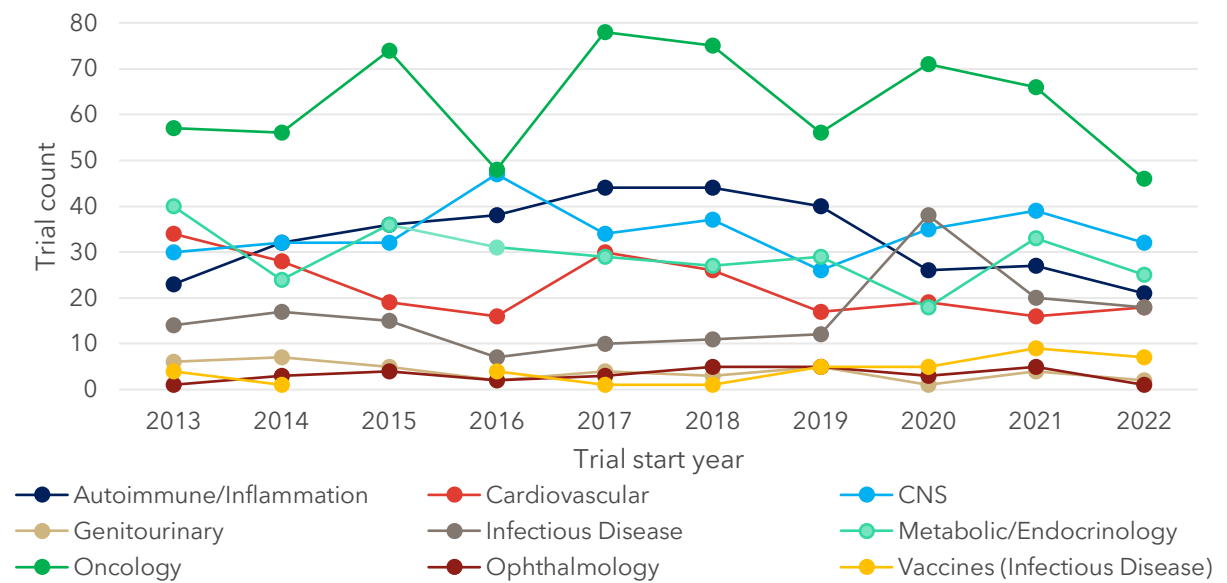
Despite some fluctuations, the number of trials initiated at sites within the Medicon Valley has remained relatively constant. There has been a relatively low proportion of Phase 1 trials, and Phase 2 and Phase 3 trials dominate the landscape accounting for 74% of new trials in 2022.



## Oncology is the dominant disease area

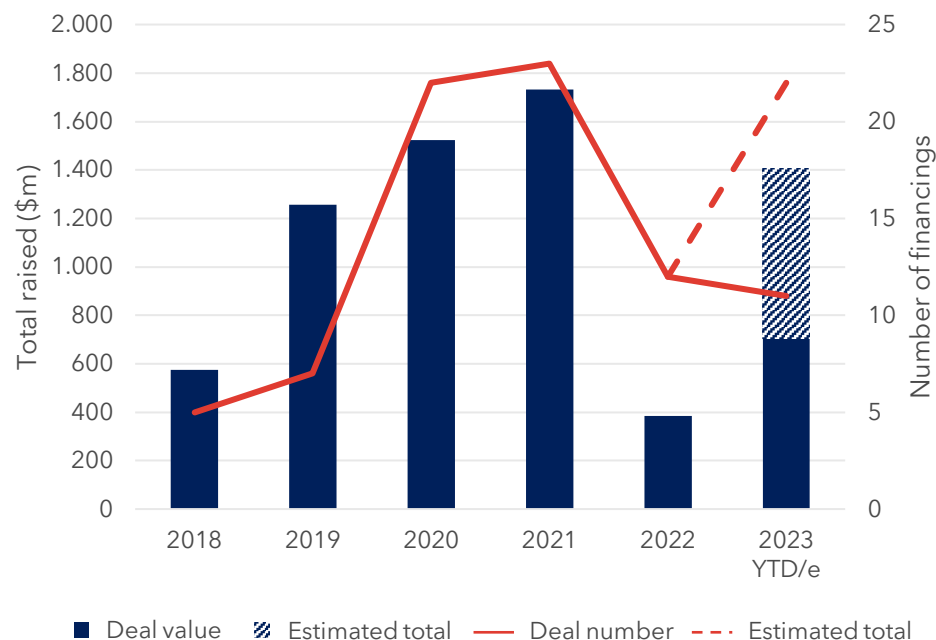


In-line with global trends, oncology has been the dominant therapeutic area over the last 10 years for trials conducted at sites within the Medicon Valley. In 2022 **27%** of initiated trials targeted cancer and this trend is expected to continue with cancer accounting for **25%** of planned trials. The number of CNS trials has also remained consistently high, accounting for **13-24%** of trials between 2013 and 2022. The number of new Autoimmune/Inflammation trials, on the other hand, has dipped somewhat, dropping from a peak of **21%** in 2019 to **12%** in 2022. 2021, and in particular 2020, saw an increase in Infectious Disease trials, driven by repurposing efforts against **COVID-19**.



# Financing statistics

## Financing activity in the Medicon Valley

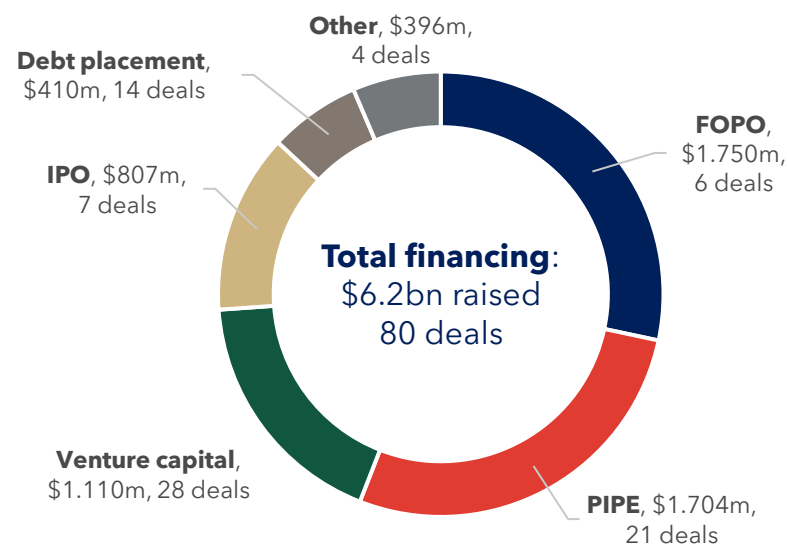


Investment in the Medicon Valley life sciences cluster has bounced back strongly in 2023, despite the continued global downturn within biotech. At current pace, 2023 will see total fundraising approach **\$1.5bn**, just shy of the peaks of the pandemic.

Danish companies have the lion's share of investor activity so far in 2023, although Swedish companies raised an impressive \$160m in spite of challenging market conditions during 2022.

## Financing breakdown since 2018

Medicon Valley attracts a range of private and public investment sources. Robust venture capital funding allows start-up creation, while public markets are on hand to support the maturation of companies through their lifecycle. In total, **43 discrete companies** have raised capital since 2018.



FOPO = follow-on public offering, IPO = initial public offering, PIPE = private investment in public equity

**Largest financing:**  
**\$655m** FOPO in July 2020



**Largest deal of 2023:**  
**\$236m** private placement in February



**Largest IPO:**  
**\$550m** on Nasdaq in July 2019



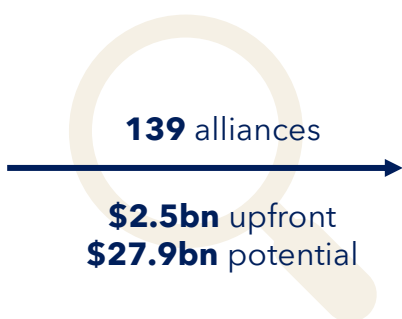
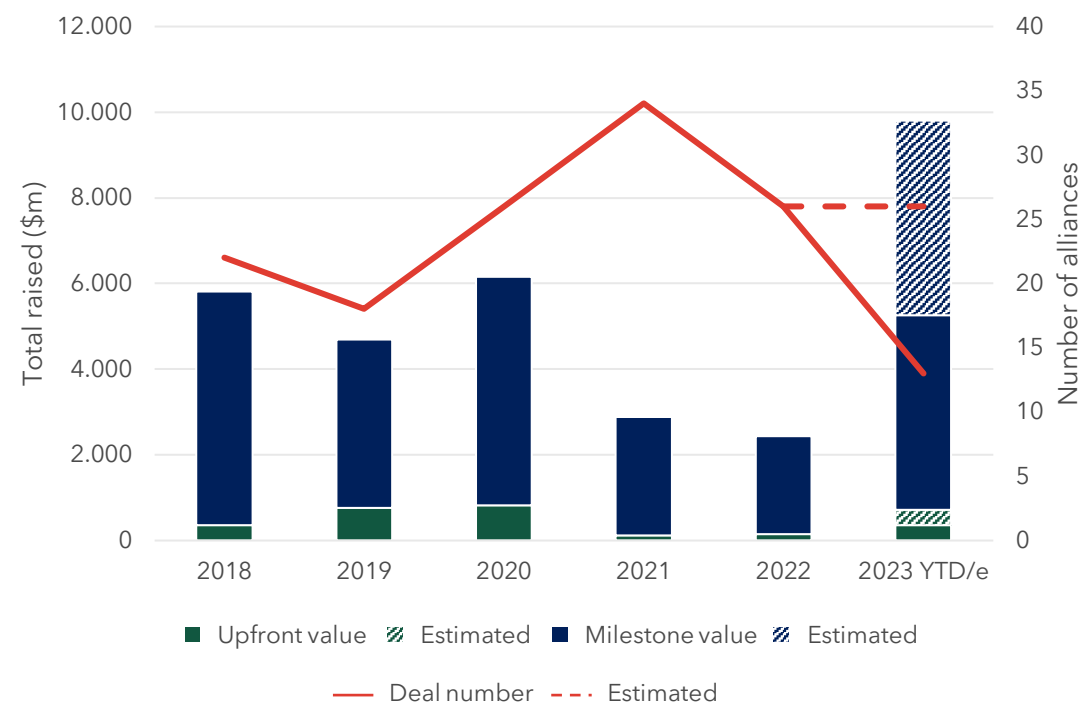
**Largest venture round:**  
**\$155m** Series B in January 2021



**Medicon Valley Alliance**

# Partnering statistics

## Alliance activity in Medicon Valley



It has been a busy start to 2023 in terms of alliances. Companies in the Medicon Valley signed **13 partnerships** in the first six months, matching the pace of previous years. However, the values of these deals have been striking, representing a **four-fold increase** on 2021 and 2022 if the current rate is maintained. This includes larger upfront payments as well as potential milestones, as both the region’s technologies are in demand and its larger players are tapping into external innovation.

Highlight deals include a \$1bn R&D alliance between **Aqilion** and Merck, the gene editing collaboration between Life Edit and **Novo Nordisk**, and **Bavarian Nordic’s** acquisition of a travel vaccine portfolio.

## Alliance breakdown since 2018

	Deal number	Upfront value (\$m)	Total value (\$m)
<b>Out-licensing deals</b>	<b>72</b>	<b>1,069</b>	<b>10,153</b>
North America	32	888	7,285
Europe	30	107	2,005
APAC	10	74	863
<b>In-licensing deals</b>	<b>78</b>	<b>1,577</b>	<b>17,212</b>
North America	36	927	7,820
Europe	33	555	7,820
APAC	8	95	1,570
Undisclosed	1	0	2
<b>Intra-Medicon Valley</b>	<b>11</b>	<b>107</b>	<b>494</b>
<b>Total</b>	<b>139</b>	<b>2,539</b>	<b>26,872</b>

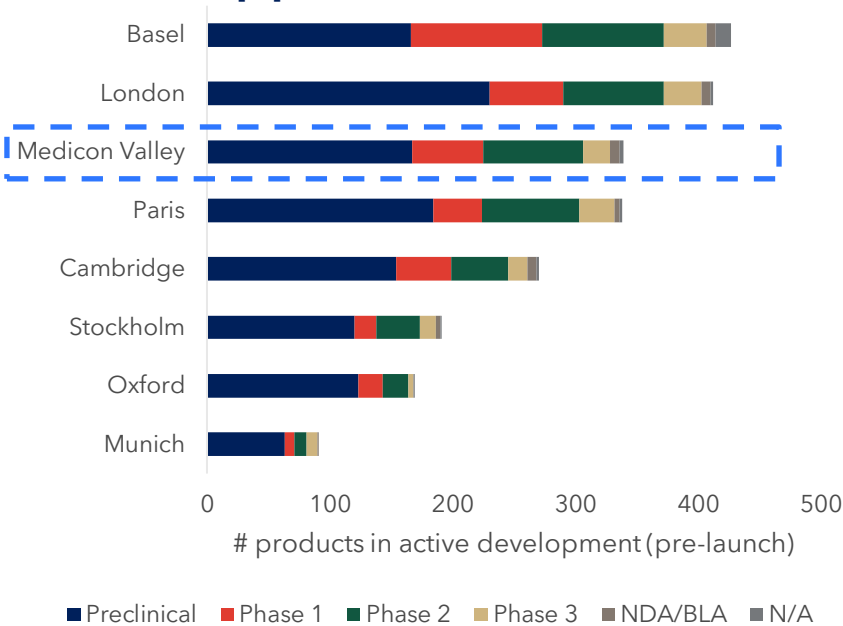
For Medicon Valley companies out-licensing technology to partners, total upfront payments since 2018 now exceed **\$1bn across 72 deals**, providing important revenue stream to continue to fund R&D operations. Including milestones, this has the potential to **rise to \$10bn**.

Companies in the region are even more active in acquiring capabilities from others, signing **78 such alliances** since 2018. Novo Nordisk is by far the most active company (20 deals), ahead of Genmab (9).



# European life science cluster comparison

## Medicon Valley ranks highly vs European clusters on pipeline size



Products in active development (pre-launch)

Basel	427
London	412
Medicon Valley	339
Paris	338
Cambridge	270
Stockholm	191
Oxford	169
Munich	91

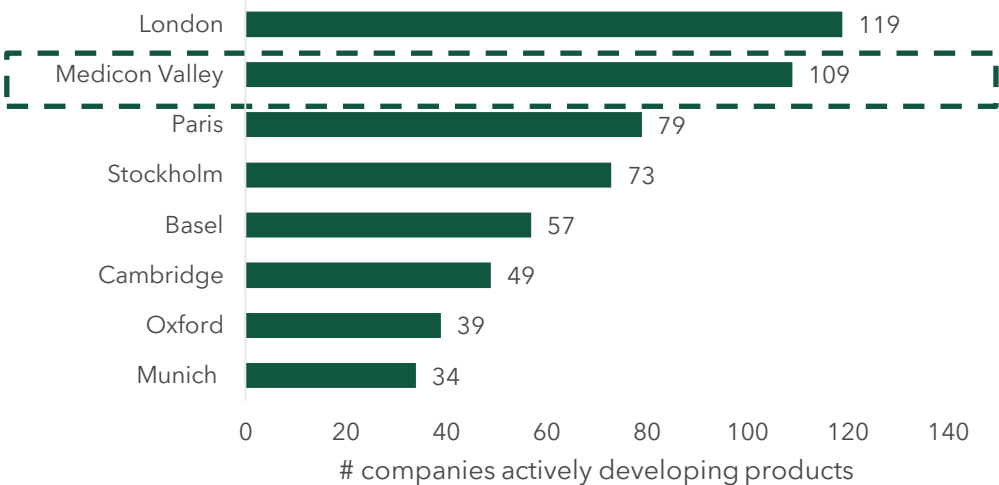


The Medicon Valley is the third most active biopharma cluster in Europe with 339 products in active development (pre-launch) and is outranked only by Basel with 427 and London with 412. What’s more, the Medicon Valley has a high proportion of drugs in clinical development. Apart from Basel it is the other only cluster with **more than 50% of its drugs in the clinic**. Such an advanced pipeline bodes well for future approvals.

## Medicon Valley also contains a large and diverse set of companies

The Medicon Valley has the second highest number of companies actively developing pipeline products. The region’s 109 companies are outranked only by London with 119.

The diverse ecosystem of companies in the Medicon Valley, including a large community of start-up VC-backed biotechs in Sweden and commercial-stage biopharmas in Copenhagen should ensure the region is well positioned for future growth. Interestingly, while there are more products being developed in Basel, this development is split across far fewer companies.

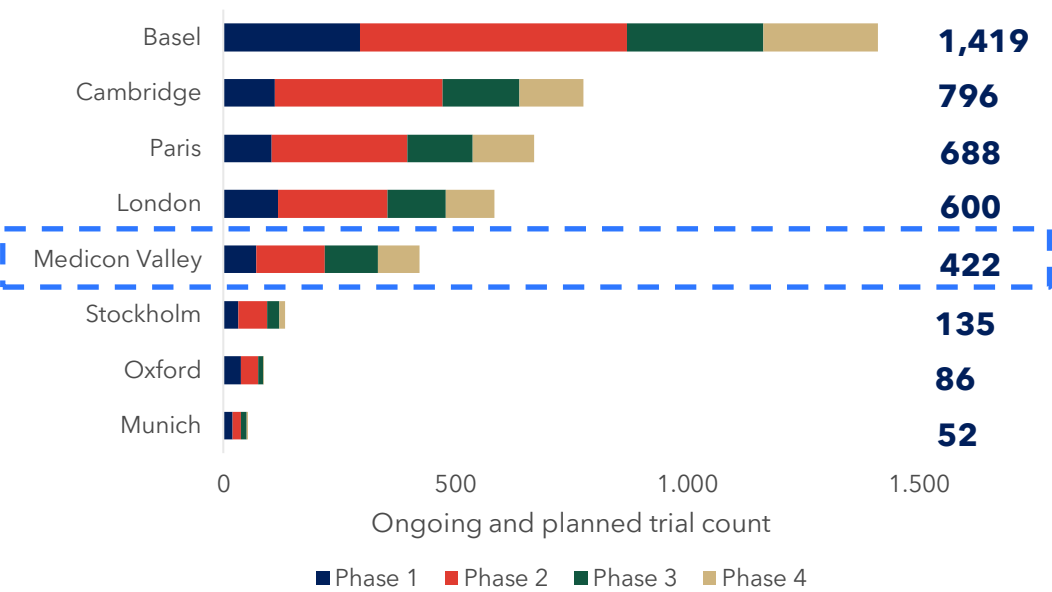


novo  
nordisk  
fonden

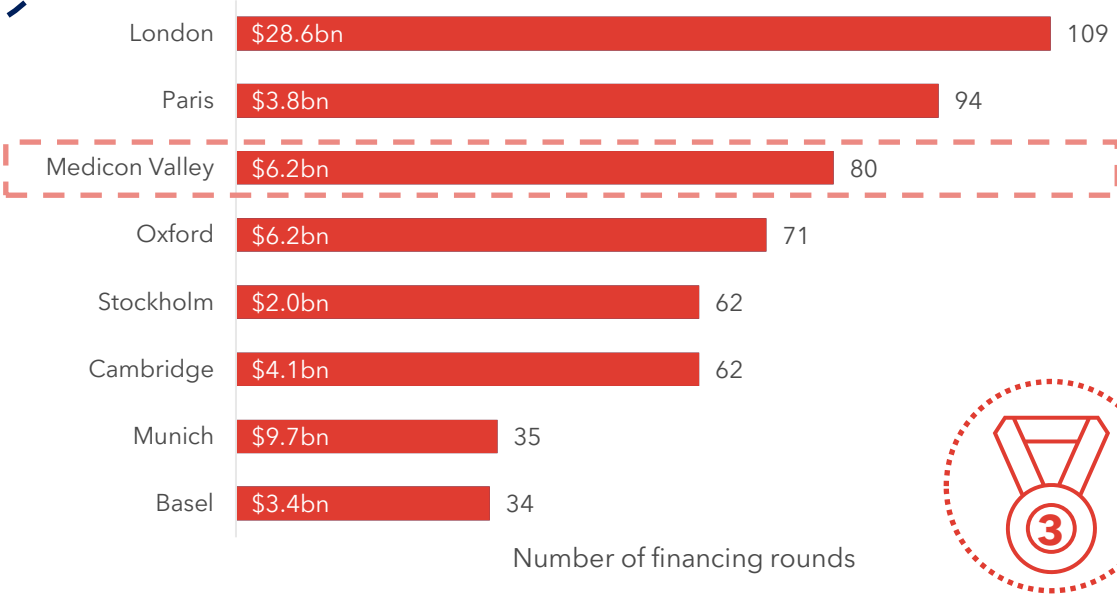
The life sciences ecosystem in the Medicon Valley is supported by the Novo Nordisk Foundation. It is a leading corporate life sciences VC fund and awarded a total of DKK 7.5bn in grants for new projects and initiatives in 2022<sup>1</sup>. This investment is expected to continue with Novo Nordisk riding a wave of demand for its highly effective diabetes and weight-loss drugs. Novo Nordisk recently become Europe’s most valuable company<sup>2</sup>.

# European life science cluster comparison

Organizations in Medicon Valley are sponsoring >400 trials



Its companies are among the most active fundraisers in Europe



The Medicon Valley has the 5th highest number of **ongoing and planned trials** out of the European life science clusters and organizations here are sponsoring three times more trials than those headquartered in Stockholm.



Compared to other European life science clusters, the Medicon Valley scores highly in terms of overall **fundraising activity**. Its third place ranking on both deal number and value shows the attractiveness of its companies to investors.



Since 2018, the **\$6.2bn in financing** secured is only behind London and Munich. With such a large ecosystem of active drug developers, the **80 separate fundraising deals** exceeds the total for major biotech hubs such as Oxford, Cambridge and Basel.

# People - Unleashing the Medicon Valley Potential



## Securing funding from Swedish, Danish and international investors

Goran Forsberg, CEO  
Cantargia, Lund

Cantargia is a Swedish biotechnology company with an established platform based on the protein IL1RAP. Its main asset, the antibody nadunolimab, is being studied clinically in combination with chemotherapy or immune therapy with a primary focus on non-small cell lung cancer and pancreatic cancer.

Cantargia, which started as a university spin-out, has succeeded where many have failed and has taken preliminary research findings all the way to Phase 2 clinical development.

✓ **Securing early investment**  
"There was a discovery at Lund University around a new target in cancer and they got some seed financing to take this finding forward in a company structure. They filed some early IP which generated lots of interest from investors, then 2-3 years down the track they realized this could be a really big commercial opportunity and they managed to get some funding through Sunstone in Copenhagen."

✓ **IPO on Nasdaq First North**  
"We became listed in 2015, so we raised capital over the stock exchange, and as of today we've raised €150M, so quite a lot of money and predominantly from institutional investors. Most of them have been Swedish, but there are a number of US funds and some European funds that have stepped in."

✓ **Challenging climate for investment, but future opportunities expected**  
"It's a really tough market right now and very complex to get fresh money unless you have good clinical results. I think we're very lucky not to be at an earlier stage. Many companies that have become listed are worth below the cash they have on hand, which is a major problem. However, these low valuations also create tremendous opportunities, therefore I am convinced there will a change in the not-too-distant future."



## Pioneering innovation in the Medicon Valley

Araya Bethlehem, CEO  
MedTech by Sigma Connectivity, Lund

The global tech-house Sigma Connectivity established a Medtech-focused subsidiary in 2022 to meet the growing needs of Medtech customers within the region. With one of Europe's most advanced design, test and verification labs, the team can meet the specific needs of bringing advanced medical devices to market. The company offers varying levels of support from proof-of-concept testing to full project execution.



### Coala Heart Monitor

Sigma Connectivity turned Coala Life's concept of a digital stethoscope into a fully functioning product. Since launching, the heart monitor has received numerous awards, and has been talked about around the world, but most importantly, it is fulfilling Coala Life's mission to allow monitoring and analysis of heart activity, anywhere, at any time, by anyone.

**"People who didn't know that they had heart problems could be detected early because of this solution."**



### Ambu

Ambu, the leading provider of single-use endoscopes, has maintained a long-standing strategic partnership with Sigma Connectivity for innovation and development of its products.



### Tendo

Sigma Connectivity developed a medical aid for people with gripping limitations enabling them to grip, hold and release objects by pulling an artificial tendon. It's made for people who struggle with everyday activities due to a stroke, spinal cord injury or arthritis for example.

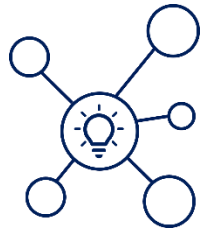




## Establishing professional networks to facilitate success



Ulf Andersson  
Medeon Science Park, Malmö



Medeon, Sweden's oldest life science park, provides a creative environment for new and established companies. Medeon's networks promote collaboration and exchange between researchers, healthcare professionals and entrepreneurs. Their popular networking events provide opportunities for valuable research and business connections.

### Diabetes Alliance Sweden

**"We are running Diabetes Alliance Sweden which has 380 members including companies, researchers, academics and clinicians and all the patient organizations are included. We are travelling the country giving seminars."**

### Dent2Health

This is an initiative managed by Medeon Science Park, the goal of which is to develop a screening tool for Type 2 diabetes. By taking a sample in the mouth during a dental care visit, the aim is to identify at risk individuals.

**"We have attracted not only the universities of Lund and Malmö and TePe, but also the Steno Diabetes Center in Copenhagen, The University of Copenhagen, The Danish Technical University etc."**

### Pharma Development Group

A regional group with 65 members, largely young biopharma companies, meets 4 times each year to enable effective knowledge exchange. Meetings take place in a round table format and discussion topics include financing, due diligence processes, IP issues and how to approach larger companies etc.

## Leveraging collaborations to ensure research excellence



Lars Pedersen, CEO  
Bioneer, Copenhagen

Bioneer, a specialty CRO, helps its customers develop and produce promising early drug candidates. The not-for-profit is supported by the Danish Ministry of Research and Education to promote Danish research. A team of 80 highly skilled scientists and technicians is based across two sites in the Copenhagen area.

Bioneer has been a trusted strategic R&D partner to biotech and pharmaceutical companies since 1982 and has maintained this position by driving internal excellence and leveraging external collaborations.

**"We have close collaborations in Denmark, but also outside of Denmark with research partners such as universities, hospitals and so on, in order to be able to create complex models. An organization of 80 people cannot develop all these services themselves; we have to rely on collaboration."**

Lars believes the high concentration of biotech, pharma and medtech companies in the region enables fruitful collaborations which fuels success.

**"Within the vicinity of the Medicon Valley area there's lots of companies, but there's also lots of networking opportunities. It's a large ecosystem with a lot of smaller ecosystems."**

**"Our clients sometimes need services that we don't offer and so we buy these services on behalf of our clients. We often buy locally because the service portfolio offered by the region is quite high."**

## Strong ecosystem critical in attracting scarce talent

Niels Abel Bonde, VP HCP Marketing Obesity  
Novo Nordisk, Copenhagen

Novo Nordisk, the Danish-based global pharmaceutical company, is celebrating a milestone anniversary this year, it has been 100 years since the founding fathers took insulin to Europe, and the company is currently riding high, due a surge in demand for GLP-1 in diabetes and obesity. VP Niels Abel Bonde discusses the importance of being part of a life science ecosystem and how this ecosystem is evolving.



### Importance of strong ecosystem

"The main strength of having a cluster around life sciences is that it attracts a lot of competencies. It's very important to have an ecosystem around you and not just have one big employer in the region. The whole ecosystem supports attraction of talent, which is a scarce resource these days. We have very strong universities both in Denmark and the southern part of Sweden and the government and the regions on both sides also supports a strong vibrant and integrated life science ecosystem."

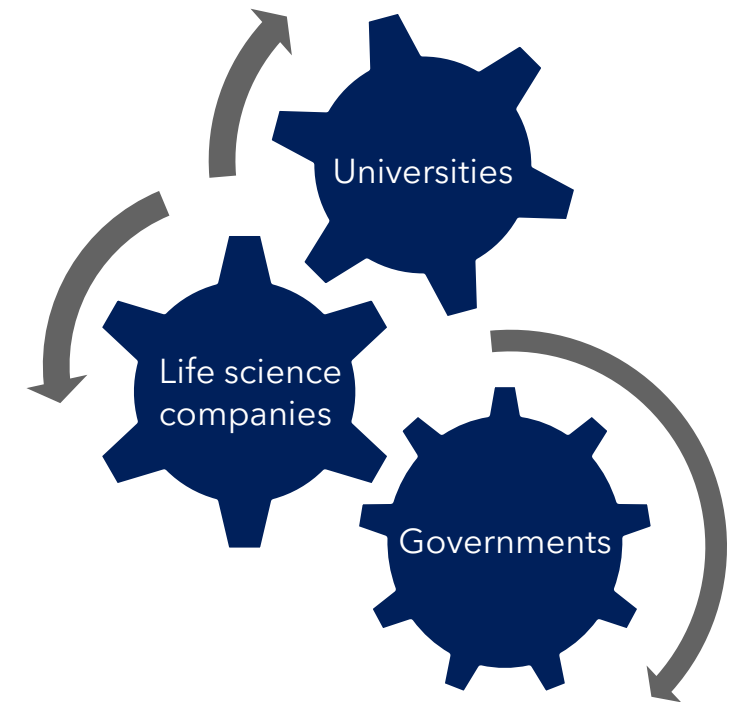
"There's a strong base for diabetes research here. We have DiaUnion which is an important project around mapping and research within type 1 diabetes and there's also some very strong research units at hospitals and universities, both in Sweden and the Steno Diabetes Center in Denmark."

### Evolving ecosystem



"One important development in the Medicon Valley is that we're seeing more precision medicine, more advanced medicines, particularly on the Swedish side. Lund University is one of the leading universities in the world in this area."

"The second trend is that there's more globalization, Historically Novo were more based in-house and in Denmark, but now we're expanding globally."



Medicon Valley Alliance

## Strategic location enables strength through cultural diversity

Søren Bregenholt, CEO  
Alligator Bioscience, Lund

Alligator Bioscience, a biotechnology company developing antibody-based drugs for cancer treatment, believes diversity and inclusion are fundamental in building an innovative and thriving workplace. For the second year in a row, Alligator has been ranked as one of the top 10 organizations for diversity in Sweden by AllBright.

### Strong R&D talent pool locally

"We have access to a significant amount of talent across the entire value chain. Most of the research and discovery personnel we recruit locally in the Lund-Malmö area."

### Proximity to international airport advantageous

"For project leadership, regulatory and clinical development we need to cast the net somewhat broader. We have a number of Danes, including myself, that commute on a daily or weekly basis and the proximity to Copenhagen airport that allows us to grab a much broader European talent base. Our CMO is working out of Munich and commutes on a weekly or biweekly basis. We have medical staff in Stockholm and our Head of BD is situated in the UK."

### Strength from cultural synergy

"We've managed to find a balance where we integrate the best from the Danish and the Swedish way of approaching science, problem solving, and leadership - adding a global perspective we have build a very powerful and innovative approach and organization."



## Strong, commercially focused support for life science start-ups

Ebba Fåhraeus, CEO  
SmiLe Incubator, Lund

The SmiLe Incubator celebrated its 15-year anniversary last year and since joining 8 years ago Ebba has been instrumental in growing the organization. The SmiLe community now includes 100+ incubator and alumni companies which have raised >€750m. What's more, 21 companies have launched an IPO, including Acrivon which launched on NASDAQ for \$99m in 2022.

### Key success drivers



#### Commercial focus

"Everything we do is focused on ensuring successful business transactions for the companies."



#### Inclusivity

"50% of the money has been raised by women and 39% of our CEOs are female. There are 40 different nationalities working within our community of companies."



#### Diversification

"We're not just an incubator anymore. We also run bootcamps, an eCampus, investor networks and an alumni program. We've also recently created a fund called SmiLe Inject with SEK 40m from the Swedish government vehicle Saminvest and 11 angel investors."



#### Concentration of local talent

"People can dare to take the jump to a startup and if it doesn't work out, if it's not for them, there is still a lot of places to go back to."



# Methodology

This report has been produced by the Medicon Valley Alliance in cooperation with Citeline using data from three proprietary Citeline platforms.

## **PHARMAPROJECTS** CITELINE CLINICAL

Citeline's Phmaprojects has been monitoring and analyzing global pharma R&D activity and trends across diseases, drugs, companies and more for over 40 years. With 90,000+ drug profiles, including 20,000 drugs in active development, Phmaprojects is the trusted reference for the global drug R&D industry pipeline, providing a holistic view from preclinical to launch.

## **TRIALTROVE** CITELINE CLINICAL

Citeline's Trialtrove supports trial decision-makers throughout the clinical trial life cycle, from strategy to execution. Drawing from over 60,000 sources, Trialtrove provides unmatched trial intelligence, curating data on trial benchmarks and metrics, enrollment and study timelines, patient populations, endpoints, outcomes, geographic distribution and more.

## **BIOMEDTRACKER** CITELINE COMMERCIAL

Biomedtracker provides analysis of commercial, clinical and regulatory activities as they happen, and present them to you via an easily searchable interface and automated alerts that keep you at the top of your game.





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