

Report on research collaborations and investments in Germany

mapact

Executive summary

Novo Holdings



Between 2018 and 2022, Novo Holdings invested in 5 companies based in Germany.



In 2022, the Novo Holdings portfolio included 3 German companies with approximately 24500 employees

Novo Nordisk Foundation



Between 2018 and 2022, the Novo Nordisk Foundation (NNF) financed 26 projects with German applicants, totaling EUR 31 million.



149 young German researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences.



In 2022 the Novo Nordisk Foundation funded 12 senior researchers and 30 young researchers, PhDs and Postdocs, in projects involving German applicants.

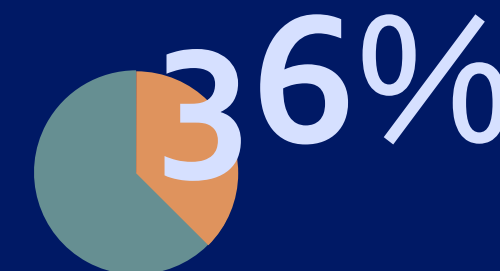
Grant recipients

146

The Foundation's grant recipients collaborates with many international project's partners, including 146 German based universities and university hospitals.



Between 2018 and 2022, NNF grant recipients collaborated with 79 German companies. 25 are in the biotechnology sector, and 28 of the companies have less than 50 employees.



Between 2018 and 2022, German grant recipients have published 1411 journal articles. 36% of these are among the top 10% most cited in their field.

10/10

10 out of 10 top German universities collaborate with NNF grantees

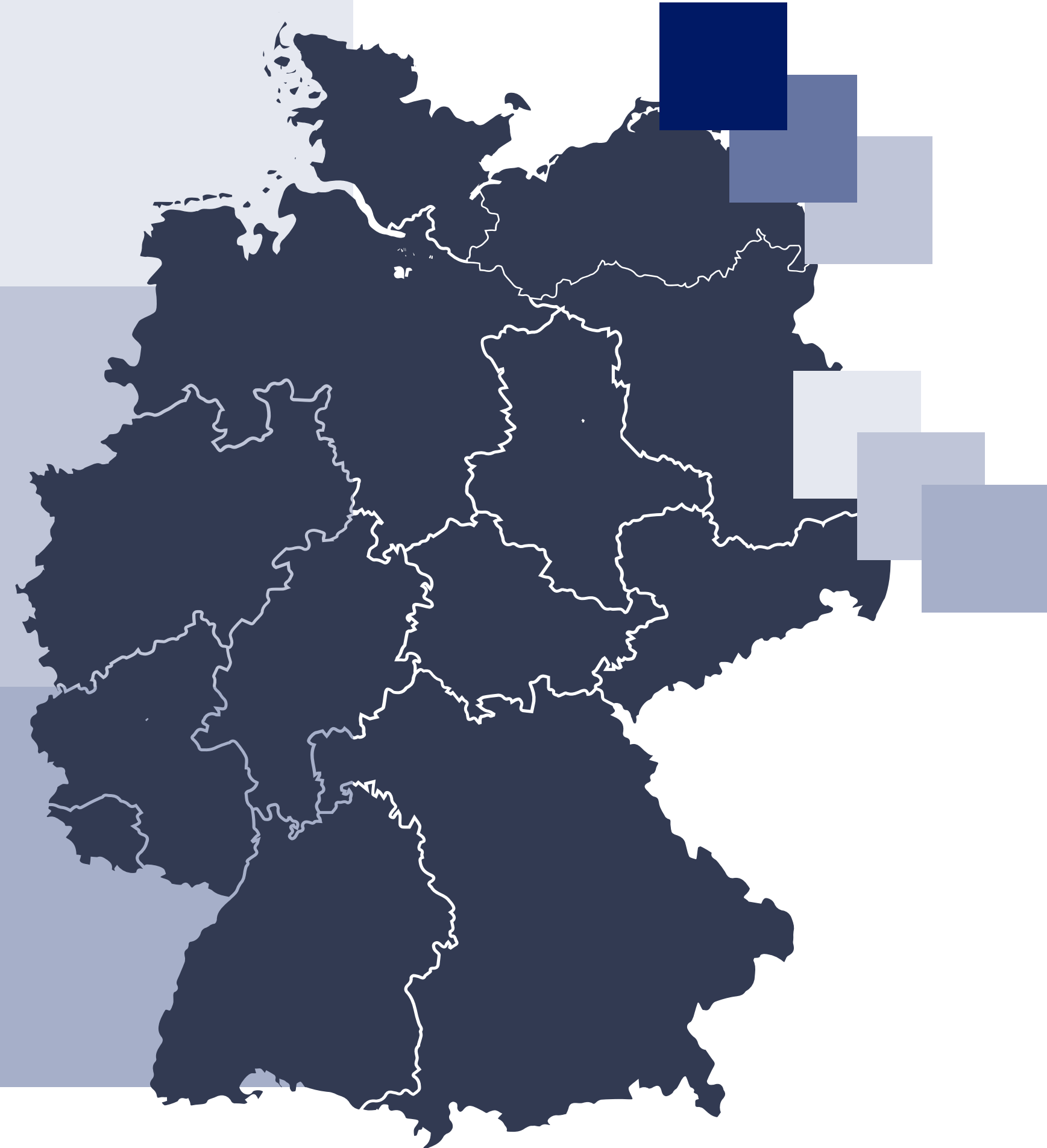
Introduction

This report is presented in two parts;

- Activities that Novo Nordisk Foundation (NNF) grant recipients have with institutions or organisations in Germany.
- An overview of Novo Holdings' investments in Germany.

This report showcases NNF's contribution to the German academic community and industry.

Through figures and case studies, it demonstrates the different kinds of relationships and activities between NNF grant recipients and German academic and industry partners. Data in the presentation are based on activities between 2018 and 2022 (inclusive).



Novo Nordisk Foundation



The history of the Novo Nordisk Foundation



The Novo Nordisk Foundation dates back to 1922, when Nobel laureate August Krogh returned home from the United States and Canada with permission to produce insulin in the Nordic countries. This marked the beginning of the development of world-class diabetes medicine in Denmark and the establishment of several foundations that, many years later, merged into today's Novo Nordisk Foundation.

1952 – the **Novo Foundation** was established as the owner of the Novo Terapeutisk Laboratorium.

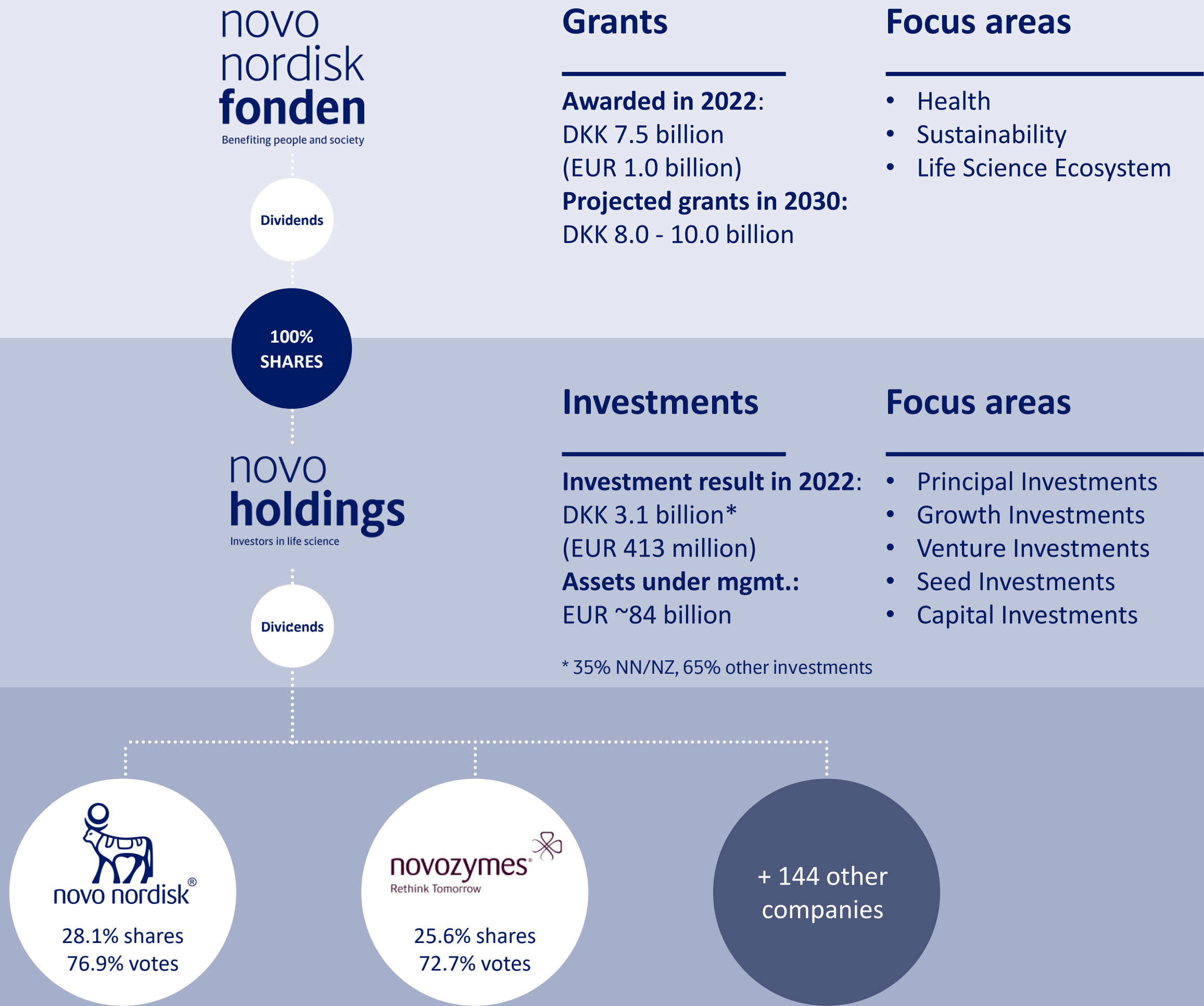
1989 – the Novo Foundation and the Nordisk Insulin Foundation were merged into **Novo Nordisk Foundation** as part of the merger between the two firms Novo Terapeutisk Laboratorium and Nordisk Insulinlaboratorium in Novo Nordisk A/S.

In 2022 the **Novo Nordisk Foundation** awarded 695 grants with a total amount of EUR 1.0 billion.

For more information, please see the [Impact Report 2022](#)

1922 – the **Nordisk Insulin Foundation** was established as the owner of the Nordisk Insulinlaboratorium. The founders agreed that the profit from the sale of diabetes medicine should be used for scientific and humanitarian purposes.

The Novo Nordisk Foundation is an independent Danish enterprise foundation



Facts about the Novo Nordisk Foundation

3

The world's
third largest
measured in grants

1

The world's
largest
measured in assets:
EUR 84 billion

2022 in numbers

Awarded DKK
7.5 billion
EUR 1.0 billion

Paid out DKK
5.2 billion
EUR 693 million

695
Grants awarded

3,070
Applications
received

18%
Success rate for
research applications
in open calls

Investment result 2022
3.1 DKK billion
EUR 413 million

Our vision to improve people’s health and the sustainability of society and the planet is pursued through a three-pronged mission

Improving the lives of people by progress research and innovation in prevention and treatment of cardiometabolic and infectious diseases



Theme 1: Preventing cardiometabolic disease



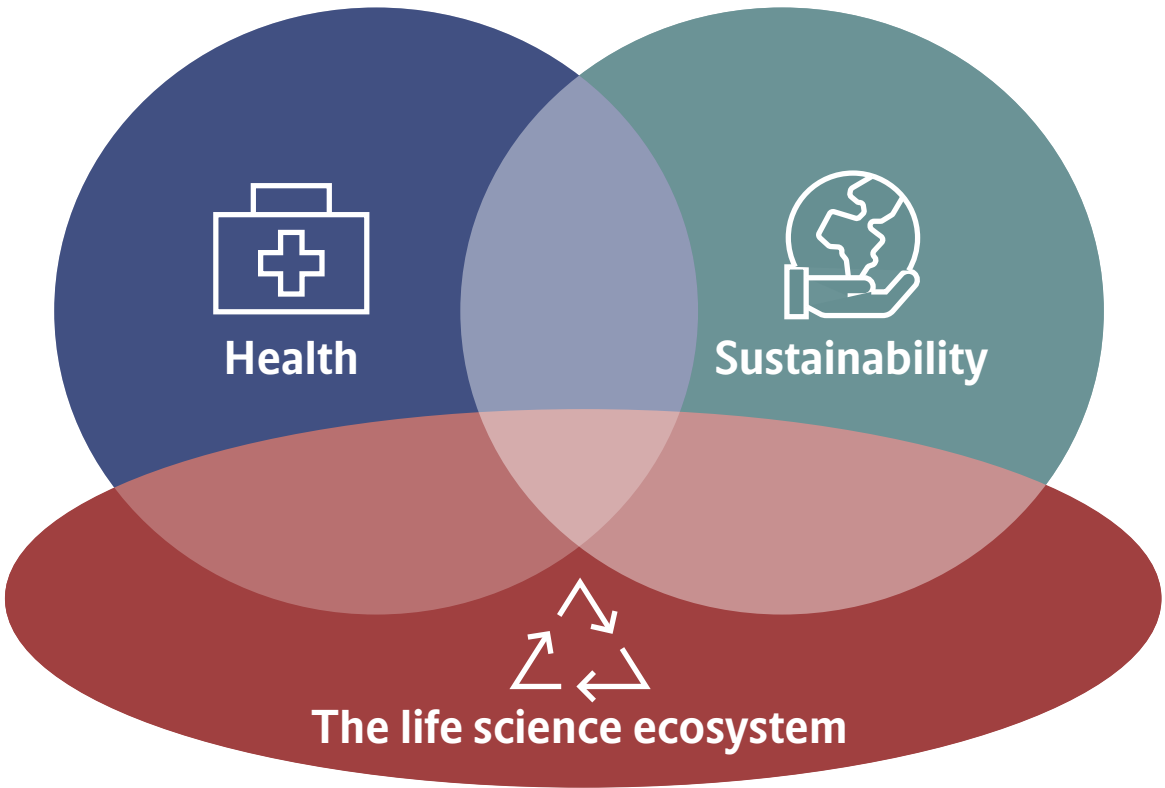
Theme 2: Understanding and managing cardiometabolic disease



Theme 3: Fighting inequity in health



Theme 4: Strengthening epidemic preparedness



Improving the sustainability of society by advance knowledge and solutions to support the green transition in society



Theme 1: Sustainable and high-yield agriculture



Theme 2: Sustainable food for healthy diets



Theme 3: High-impact climate change mitigation technologies

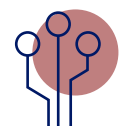


Theme 4: Supporting society in the green transition

Invest in scientific research, education and innovation to enable a world class life science ecosystem



Theme 1: Fundamental research



Theme 2: Enabling research infrastructures and technologies



Theme 3: Translational capacity and societal impact



Theme 4: Education and science capital



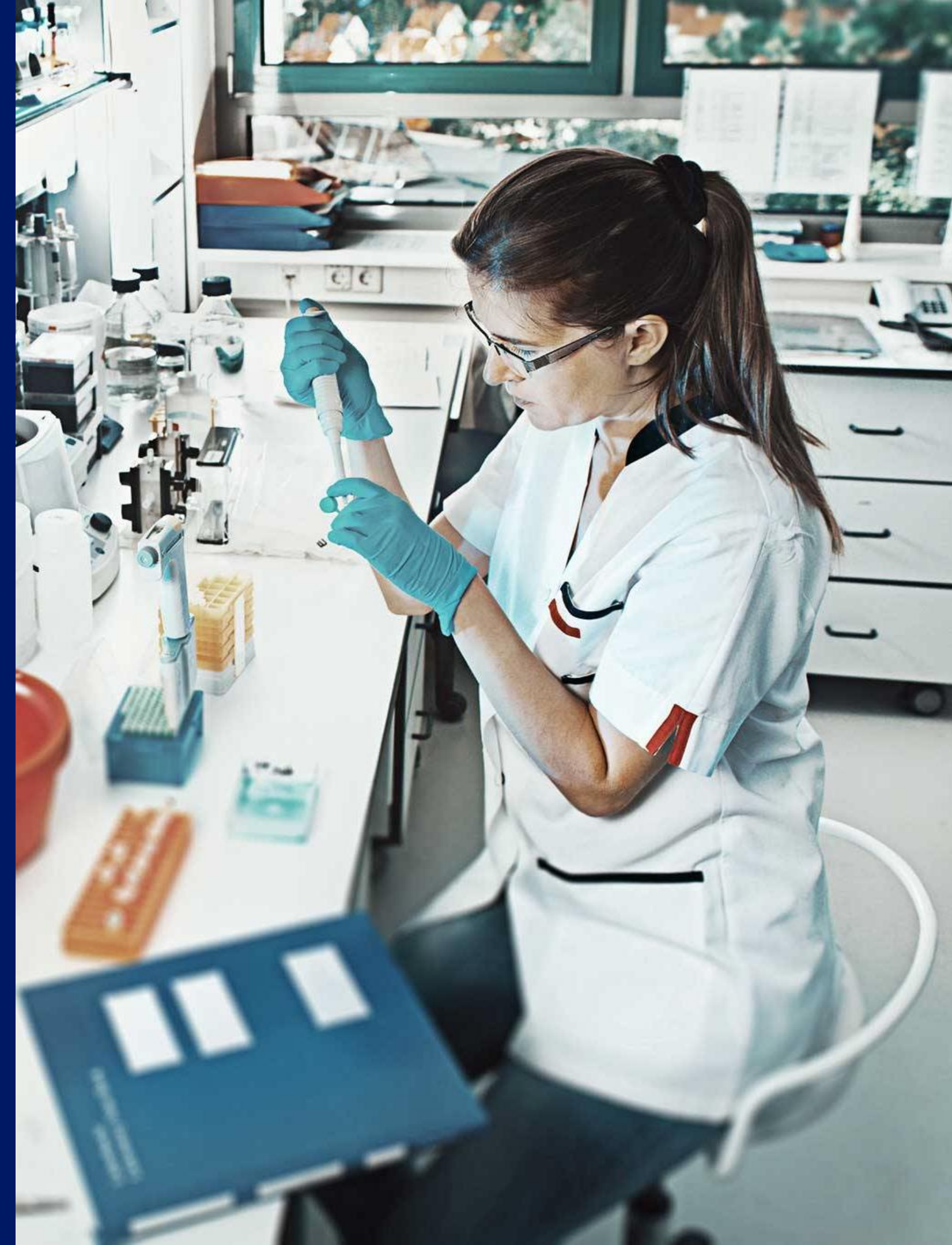
German academic and
industry collaborations
involving NNF grant
recipients 2018-2022

26 projects funded by NNF include German researchers as applicants

The Novo Nordisk Foundation has in the last five years (2018-2022) funded 26 projects that have had 18 main applicants and 9 co-applicants from Germany. Co-applicants are members of the international group applying for a NNF grant. The total funding allocated to these projects is EUR 31 million.

The funded projects span research areas including Biomedicine, Biotechnology and Nat-Tech. 17 projects were awarded in open competition, while 9 were awarded as a standalone grant.

- **University of Southern Denmark** and **University of Leipzig** have received funding for the project Mathematical Modelling for Microbial Community Induced Metabolic Diseases.
- **University of Copenhagen** and **RWTH Aachen University** have received funding for a project within Plant Science



Fostering the development of research talent at all levels

In 2022 the Novo Nordisk foundation supported 12 researchers, 11 PhDs and 19 Postdoc positions at German based research institutions through projects involving German applicants.

The Copenhagen Bioscience Conferences are a series of scientific conferences within biomedicine and biotechnology. They bring together some of the world's top researchers and young talent to discuss the latest scientific results and topics within their field. The purpose of the conferences is to enable participants to build an international network and to exchange knowledge and ideas.



Since 2014, **149** young German researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences for young research talent.

“An opportunity that facilitate high level training for PhD students and postdocs”

NNF applicant, 2015

NNF Grant recipients' collaborations with German partners

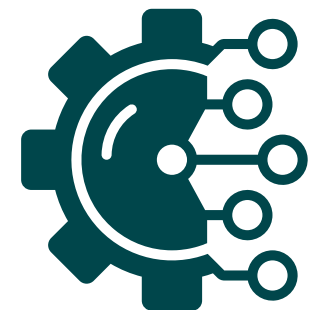
Between 2018 & 2022...



The Foundation's grant recipients have collaborated with many international project's partners, including **483** collaborations between Danish and German partners.



146 of those partners are universities and university hospitals.



75 German companies co-authored at least one scientific article with grant recipients from the Novo Nordisk Foundation.

Case stories

A university collaboration



In 2022, NNF funded an international research collaboration between **University of Southern Denmark, Technical University Munich, EMBL-Heidelberg** and **University of Copenhagen**. This project aims to develop experimental techniques and new algorithms to track single cells in space and time by combining spatial transcriptomics and single-cell RNA sequencing. The research could lead to scientific breakthroughs in tissue organization and its disruption in disease, as well as advance the understanding of tissue evolution in general.

Data science driven leaf architecture optimization



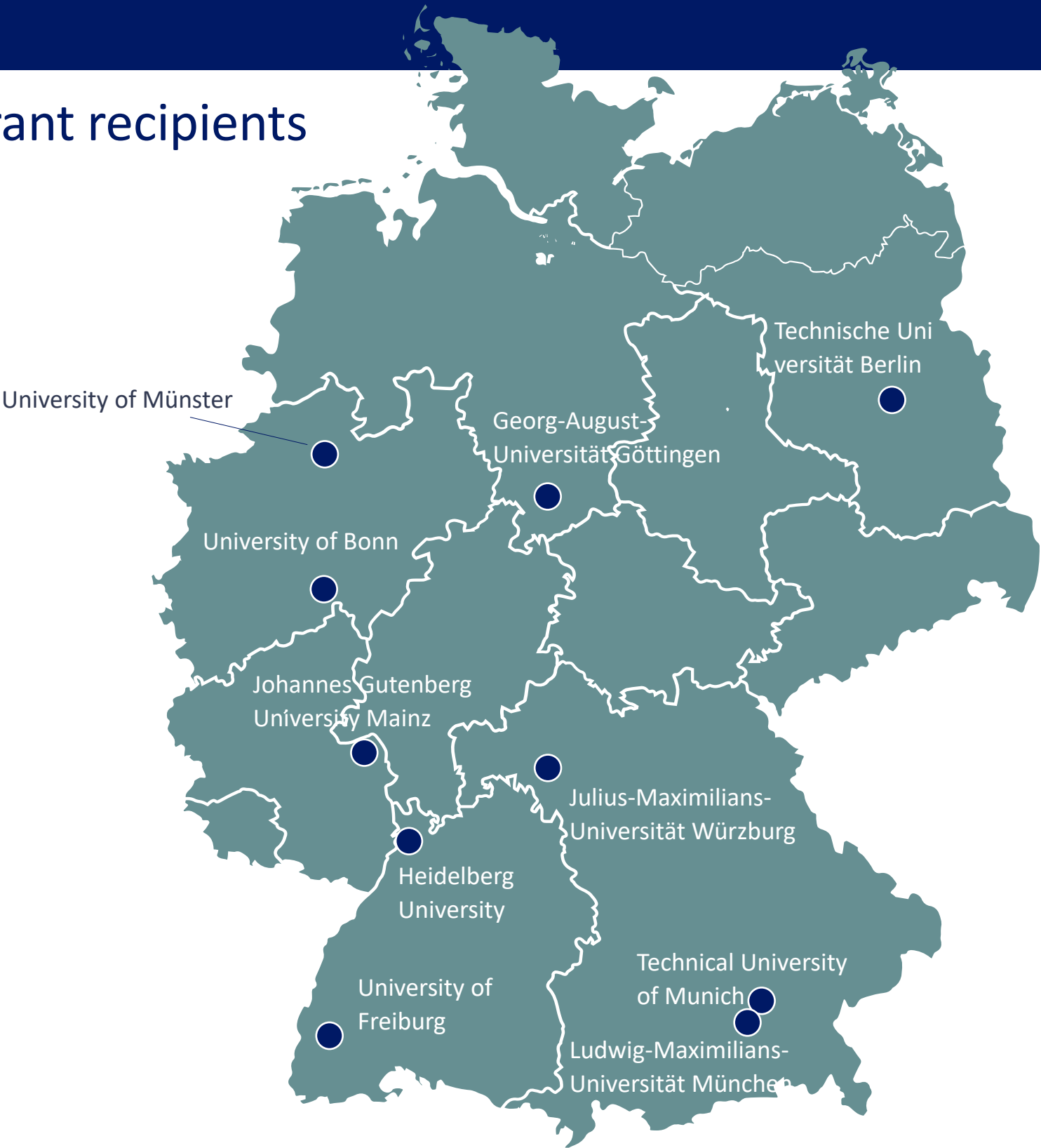
In 2022, NNF funded an international research collaboration between **University of Copenhagen** and **University of Potsdam**. The purpose of this project is to take a new perspective on photosynthesis by using a multi-scale framework that bridges machine learning and mechanistic model-ing with biology to optimize the leaf cell architecture. The outcomes may provide new targets to enhance photosynthesis, much needed for biotechnological advances.

NNF Grant recipients’ collaboration with top German universities

10 out of 10 top German universities collaborate with NNF grant recipients

		Project collaborations	Publication collaborations
1	Ludwig-Maximilians-Universität München	0	89
2	Georg-August-Universität Göttingen	1	18
3	Technical University of Munich	1	110
4	Julius-Maximilians-Universität Würzburg	0	19
5	University of Münster	0	13
6	Heidelberg University	1	87
7	University of Freiburg	1	37
8	Johannes Gutenberg University Mainz	0	23
9	Technische Universität Berlin	0	8
10	University of Bonn	0	36

Source: Novo Nordisk Foundation, CWTS Leiden Ranking 2022



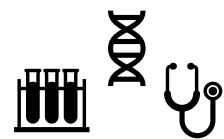
Publication collaborations between NNF grant recipients and German partners



Between 2018 and 2022, NNF grant recipients have co-authored **1411** publications with researchers located in Germany.



The highest number of German partners come from German Research Center for Environmental Health (122 publications) followed by the Technical University of Munich (110 publications) and Charité – University Medicine Berlin (99 publications).



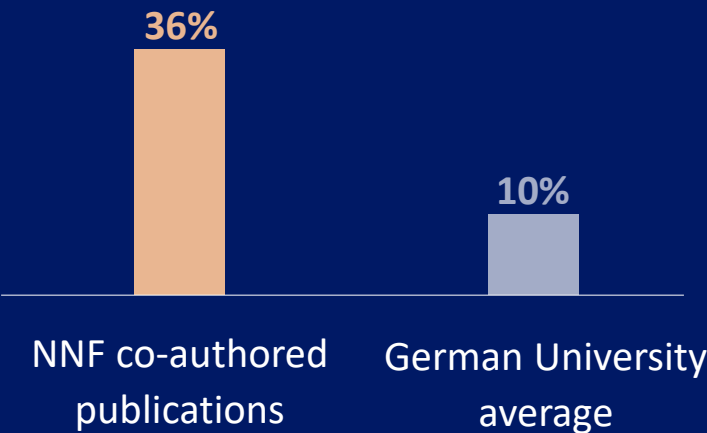
55.7% of the co-authored publications are within the research areas *Medicine* and *Biochemistry, Genetics & Molecular Biology*.



36% of the co-authored publications are within the top 10% most cited publication in their research field. The national average among the top German universities is 10%.

NNF grants contribute to research excellence

Share of co-authored publications among the top 10% most cited world-wide in the same research field and year



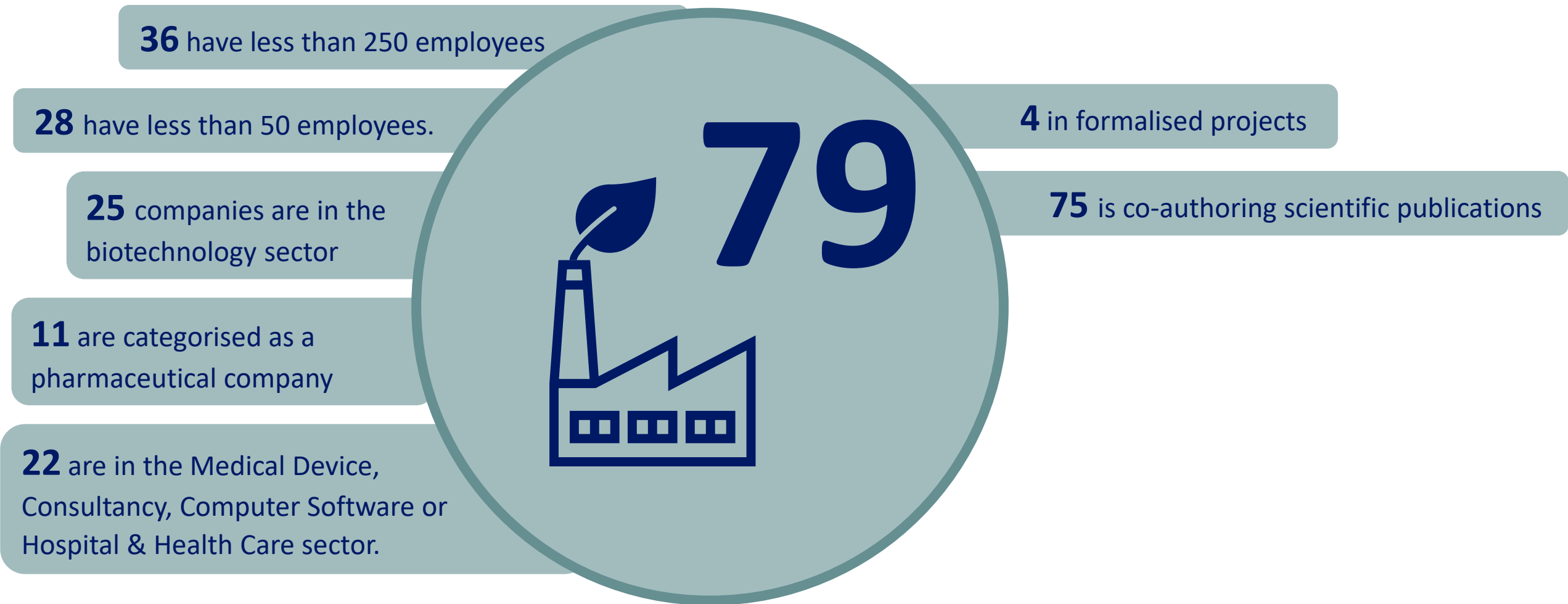
In 2021, Peer Bork was awarded the Novozymes Prize

Director of the Heidelberg site of the European Molecular Biology Laboratory, Peer Bork has been awarded the 2021 Novozymes Prize. He receives the price for developing groundbreaking, publicly available and integrative bioinformatic tools. By combining creativity and talent, Peer Bork has developed truly original tools, databases and web servers to collect and analyse the vast quantity of biological data now available with new technologies. His methods have since been used by hundreds of thousands of academic and industrial researchers for countless applications

The Novozymes Prize is awarded to outstanding research or technology contributions that benefit the development of biotechnological science for innovative solutions.

Researchers receiving grants from the Novo Nordisk Foundation collaborate with German companies

In total 79 companies collaborate with NNF grant recipients



The NNF Dashboard on Grants and Impact

The NNF Dashboard is your gateway to information about the entire value chain of grant development, starting with Calls & Applications, through to awarded grants and their impact. In addition to visualising numbers on awarded grants, gender distribution of grant holder and grant recipients host institutions, the NNF Dashboard provides insights and details on the overall development year-to-year.

For more information please visit

<https://novonordiskfonden.dk/facts-and-figures/>





Novo Holdings A/S in Germany

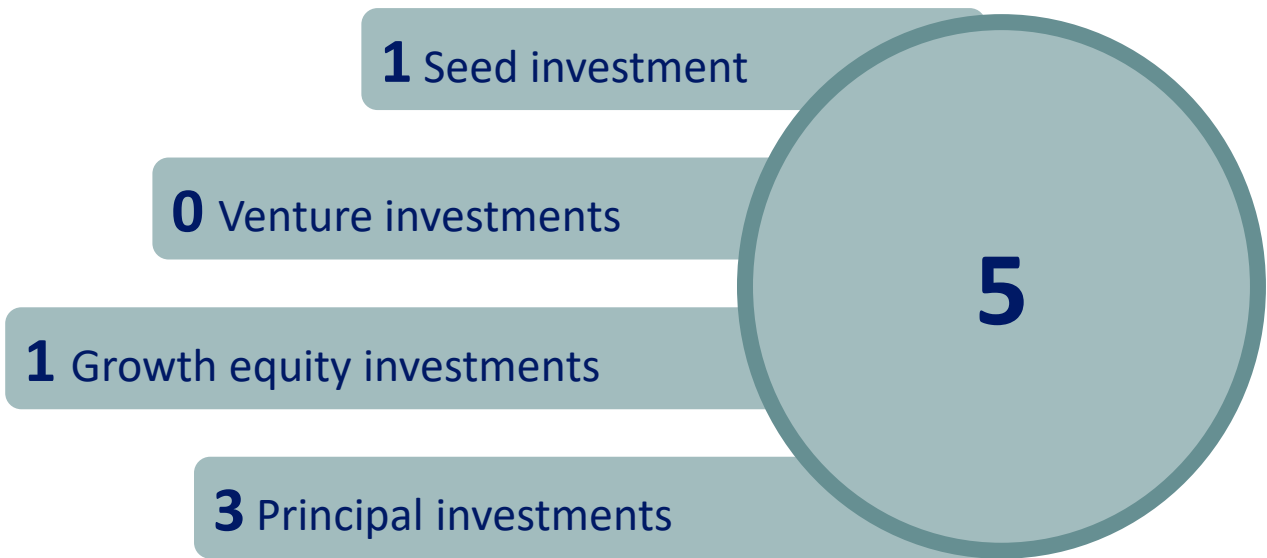
Our mission

Novo Holdings is to be a supportive owner of the Novo Group companies and to make a growing and positive impact on health, science and society by generating attractive long-term returns on the assets of the Novo Nordisk Foundation.

Novo Holdings A/S Investments in Germany

Novo Holdings A/S has in the period 2018-2022 invested in **5 German companies**. In 2022, the portfolio included 5 companies with approximately 24500 employees.

Companies in the current portfolio

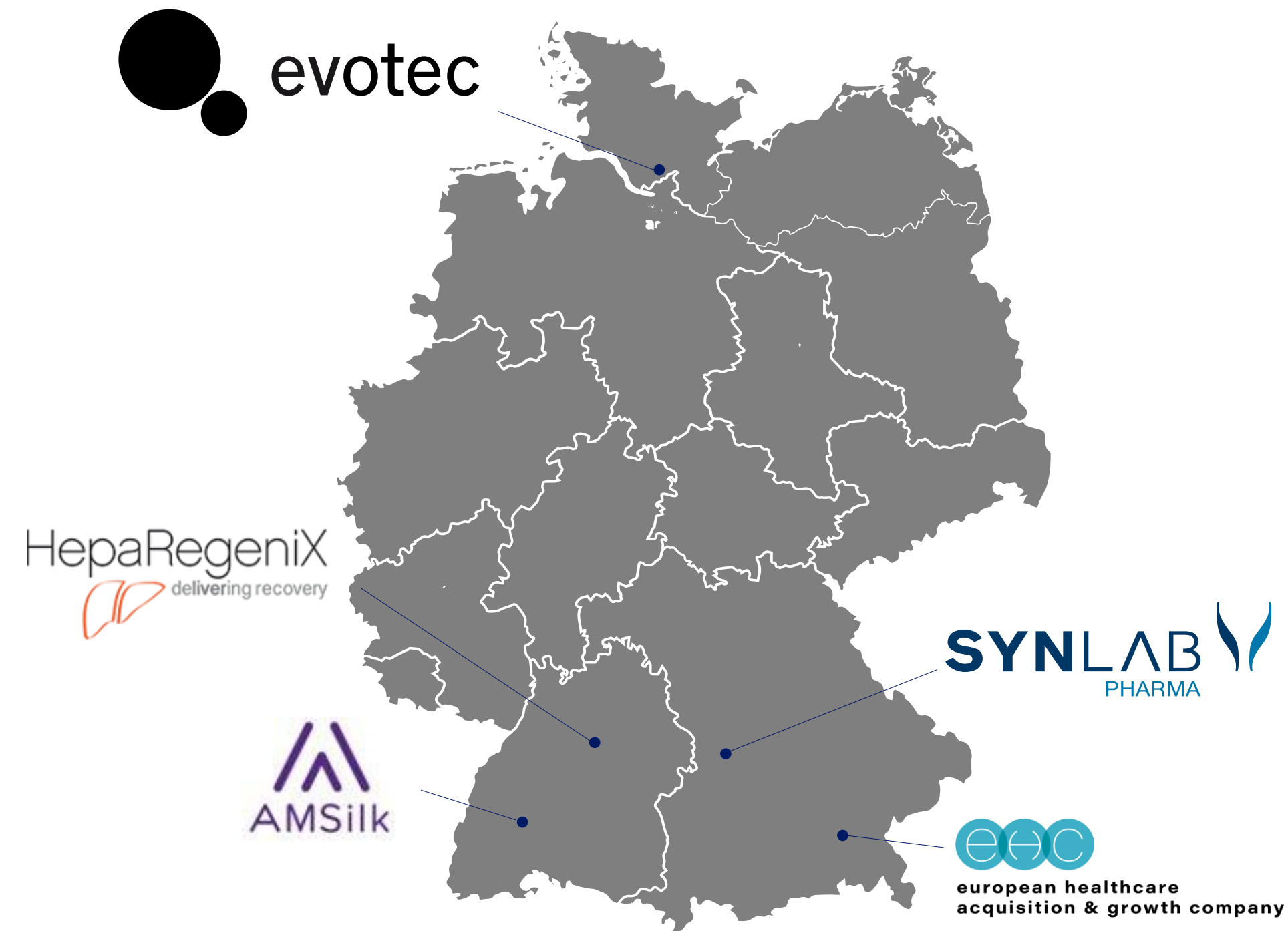


Novo Holdings A/S Investments in Germany

Evotec is a drug discovery company. By combining cutting edge research technologies with well-established drug-discovery tools the company progresses product ideas from target to clinic. Novo Holdings A/S also invest EUR 50 million to support Evotec's accelerated growth ambition.

AMSiik is a world leader in supplying innovative high-performance bio-based silk materials with a vision to use its proprietary technology platform to lead the change to better and more sustainable products. Novo Holdings led a EUR 29 million series C investment in the company.

HepaRegeniX GmbH is a preclinical stage company developing a novel therapy for the treatment of acute and chronic liver diseases. Novo Holdings teamed up with existing investors Boehringer Ingelheim Venture Fund GmbH (BIVF), the High-Tech Gruenderfonds, Coparion and Ascenion in a Series B financing round in excess of €11 million.



Appendix and additional slides

Methods and sources

Methods:

- Collaborations were defined as either a project collaboration or a publication collaboration funded by NNF with at least one German collaborator/
German institute
- University ranking was based on the time period 2018-2022, across all sciences, with institutions with at least 100 publications, and based on the PP(top10%)
- Publications were defined as publications with at least one German and one Danish author
- German industry collaborators were defined as collaborations with companies registered in the Germany
- German research partners were defined as successful NNF grant applications with at least one German co-applicant
- The number of German attendees at the Copenhagen Bioscience Conference series were defined as applicants and attendees registered to a German research institute
- Novo Holdings A/S investments in Germany were defined as investments in companies with their headquarter located in Germany

Sources:

- Researchfish (NNF grant data)
 - Research publication collaborations
 - Company project collaborations
 - Publications
- Data Warehouse, NORMA and OMADA (NNF grant application data)
 - Co-applicants
 - Copenhagen Bioscience PhD programme applicants
- The Leiden Ranking 2022
 - University rankings
 - Publication impact data
- Novo Holdings A/S
 - Investment data