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Dear Reader,

The Munich Biotech Cluster and we as a cluster organization are celebrating our 25th anniversary this year.

It is time to look back on a quarter of a century of successes and outstanding events in Munich as a biotech location. Join us on a short journey through time in our current annual report BIOTECH IN BAVARIA 2021/22.

You will also find the latest figures, analyses and trends from Bavaria, exciting interviews with companions and players in the industry and over 300 company profiles.

On the following pages you will find, as always, news from Bavarian biotechnology. Enjoy reading.

The Bio^M team wishes you a nice and relaxing summer!



Bavarian Biotech in Numbers

Bavaria has now been a leading hub for life science companies for 25 years. In 2021 Bavaria was home to a total of 509 companies in the biopharma sector. The steady increase of this figure is an indicator of a future-proof and stable industry. It is mainly small and medium-sized companies within biotech that have contributed to this growth. In total, about 44,000 people work in the pharma and biotech related sector. As of 2021, approximately 11,000 people were employed by the pharmaceutical companies, while Biotech (SMEs and international) has become an incredibly important employer within the sector with a combined workforce of around 22,000. Over the years, the Bavarian biotechnology industry has built up an impressive pipeline of compounds which, by May 2022, had reached the clinical (118) phase.



509

Companies



44,000

Employees



118

**Projects in
clinical pipeline**

[Click here for the online version of the complete Bavarian Biotech Report](#)

The only vaccine against monkeypox comes from Bavaria

German-Danish vaccine manufacturer [Bavarian Nordic A/S](#) secured a vaccine order from an undisclosed European country following confirmed monkeypox cases in Europe. The order comes shortly after the U.S. government exercised a USD 119 million contract option for the first manufacturing of freeze-dried smallpox vaccine Jynneos®. The vaccine was developed by Bavarian Nordic's research site in Martinsried. The company, headquartered in Denmark, is the only one in the world to hold regulatory approval.

Vaccine manufacturer **Bavarian Nordic**, headquartered in Denmark, has now signed a contract with an undisclosed European country to supply its **smallpox vaccine Imvanex®** in response to new cases of monkeypox emerging in Europe in May 2022. To date, more than 20 cases have been confirmed in England, Portugal and Spain, with additional suspected cases under investigation.



Bavarian Nordic's smallpox vaccine is **approved in the U.S. as Jynneos®** and in Canada as Imvamune®, both places with the approval extended to cover the monkeypox indication. On July 25, 2022 – Bavarian Nordic announced that the European Commission (EC) has extended the marketing authorization for the Company's smallpox vaccine, IMVANEX® to include protection from monkeypox and disease caused by vaccinia virus.

[Read more](#)

VisionHealth and Boehringer Ingelheim: together against asthma and COPD

VisionHealth and Boehringer Ingelheim cooperate on distribution of the inhalation app Kata®. The certified health app Kata® guides and records correct inhalation and therapy delivery for asthma and COPD. A precise use of inhalation devices is vital for successful therapy.

Around 250 million people worldwide suffer from **chronic lung diseases**. Correct use of the inhaler is a decisive factor in the success of therapy. However, studies show error rates of between 32 and 100 % during application. With incorrect inhalation, less active ingredient reaches the lungs, which can lead to more severe disease progression in the long term.

This is exactly where Munich-based [VisionHealth GmbH](#) comes in with its **app Kata®**. The versatile, easy-to-use application uses a smartphone camera and artificial intelligence (AI) to support precise inhalation, ensuring that the right medication dose reaches the lungs. The app is adapted to the most common inhalation devices and can improve the therapeutic effectiveness in about 75 % of current marketed devices.

VisionHealth GmbH is a pioneer of digital therapy support for respiratory diseases and was founded in 2017. In cooperation with research institutions and selected industry partners, medical experts and IT experts, VisionHealth develops innovative and unique digital health solutions.

As part of the collaboration, Boehringer Ingelheim will be responsible for marketing and sales of the Kata app.

[Read more](#)



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New Center for Digital Medicine and Health at Klinikum rechts der Isar

In a new building at the Klinikum rechts der Isar of the Technical University of Munich (TUM), interdisciplinary research in the fields of medicine, computer science and mathematics will be advanced in the future. Together, the research groups want to develop new approaches in the field of data science and artificial intelligence and transfer them to clinical application. The research center will receive around 43.6 million euros from the federal government and the Free State of Bavaria.



© Juli Eberle / TUM

Under the umbrella of the [Munich Data Science Institute](#) (MDSI), the ZDMG will operate as a standalone research center, developing new data-driven approaches and methodologies and promoting their use to benefit patients, in particular in treatments of cancer and cardiovascular disease and in neurological medicine.

Digital healthcare through the secure use of patient data

A primary focus will be the development of individualized and personalized treatments and interventions. In that regard, the early detection and diagnosis of diseases and the identification of biomarkers and treatment objectives using **AI** and **data science** will play a crucial role

For the interactive visualization of big data in medicine, plans for the ZDMG also include a data observatory. With this unique facility – the largest of its kind in Europe – it will be possible to visualize very large datasets from clinical laboratory results, image data and more complex data such as genetic mutations and cellular changes and compare them on multiple screens. [Read more](#)

Ebenbuild wins the digital health category at EIT Health Catapult 2022

Munich-based health tech start-up [Ebenbuild GmbH](#) was crowned by [EIT Health e.V.](#) at the [EIT Health Catapult](#) competition.

Ebenbuild won the digital health category with a pitch by CEO, Kei Müller, with its pioneering vision to use AI software to generate unprecedented data on patients' lungs and provide tailored therapy to treat acute respiratory distress syndrome (ARDS).



© Pixabay

Just recently, in March 2022, the spin-off from the [Technical University of Munich](#), has closed a seed funding round of EUR 2.5 million. With the fresh capital of lead investors are **High-Tech Gründerfonds** and **Bayern Kapital**, Ebenbuild aims to further develop its digital lung twins, personalized simulation models based on patient data to improve the treatment of intensive care patients with ARDS.

By calculating regional distributions of mechanical quantities such as stresses and strains, Ebenbuild provides a novel **computer-based imaging technique** that makes ventilator therapy quantifiable for the first time. The scalable software solution can be used worldwide, regardless of the brand or manufacturer of the ventilator.

The Catapult competition is an EIT Health initiative that looks to boost the development of European health start-ups by exposing them to world-class experts and investors.

[Read more](#)

adivo: species-specific antibody library FELIX™ for cats

adivo GmbH from Martinsried is launching its cat-specific antibody library FELIX and is also expanding its global research cooperation with a leading veterinary company. As part of the collaboration, adivo will receive performance-related milestones and royalties on marketed products.

adivo aims to usher in a new era for pet health. The Martinsried-based company wants to achieve this with its proprietary phage display antibody libraries, which serve as the basis for the development of species-specific drugs against cancer, chronic inflammatory diseases and other serious diseases in companion animals.



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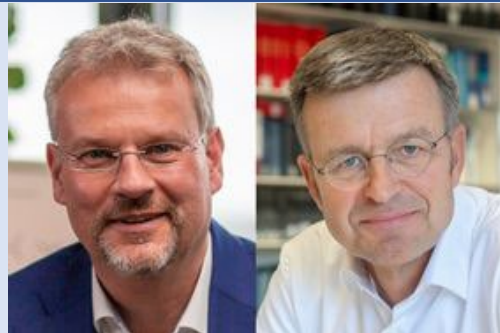
The extension of the agreement signed in December 2020 now includes the joint discovery and development of therapeutic monoclonal antibodies for cats, in addition to ongoing research projects addressing serious diseases in dogs. In addition, adivo announced the launch of its cat-specific antibody library FELIX, the first fully synthetic source of therapeutic antibodies on the market.

C-NAT™ wins Cluster4Future to develop new nucleic acid-based therapies

The seven winners of the second round of the Clusters4Future competition have been announced. Munich's C-NAT™, a cluster for the development of new nucleic acid-based therapies, is the proud winner. As the Munich cluster organization, Bio^M provided support and spoke with Prof. Thomas Carell and Prof. Stefan Engelhardt, the heads of the future cluster.

RNA is one of the buzzwords of the pandemic and, in addition to corona vaccines, a great hope in the individualized therapy of various diseases such as cancer or autoimmune diseases.

The ability to design nucleic acids in a highly specific and theoretically predictable way opens up completely new treatment approaches in medicine. The future cluster **C-NAT™** from Munich is dedicated to the development of new drugs and vaccines of the next generation based on nucleic acids. The new key technology is expected to enable treatment successes for previously untreatable diseases. In collaboration with industrial partners, C-NAT™ aims to establish a highly innovative and world-leading industrial focus in the field of nucleic acid therapeutics.



the heads of the future cluster C-NAT™: Prof. Dr. Thomas Carell (left, © Prof. Carell) and Prof. Dr. Stefan Engelhardt (© TUM).

Bio^M spoke with the leaders of the Future Cluster. [You can find the entire interview here](#)

From coal to biotechnology - 50 years Roche in Penzberg

Exactly 50 years ago, on June 29, 1972, the Roche pharmaceutical group laid the cornerstone for its plant in Penzberg, thus initiating a structural change from coal mining to biotechnology with a complete value chain at one location. This anniversary Roche celebrates extensively.

When Boehringer Mannheim reached its spatial capacities at its Tutzing site, the pharmaceutical company found a suitable location in Penzberg's Nonnenwald forest on the site of a former coal mine - a blessing for Penzberg after its mining era. From a good 120 employees in 1974 to over

2,500 when **Roche** took over in 1997, Roche now has 7,200 employees and has thus become the largest employer in the area. Roche also combines the entire value chain at the Penzberg site, from research and development to production.

Personalized medicine - digitization - health data

In Penzberg, Roche is working on new active compounds for the treatment of cancer and other indications; ingredients for diagnostic tests and these tests themselves are also developed and produced here.

Roche is committed to personalized medicine, treatments that are tailored to the individual patient. Increasingly, the possibilities of digitization and the use of health data are also being used here. [Read more](#)



© Roche

Sirana Pharma enters into cooperation with Pfizer

Sirana Pharma GmbH of Planegg, near Munich, Germany, announced a research collaboration with Pfizer Inc. to identify and validate a potential novel treatment for a rare bone disease. The biotechnology company is committed to developing innovative and effective therapies for muscle and bone diseases with unmet medical need, and the collaboration with Pfizer will leverage its proprietary targeted microRNA (miRNA) approach aimed at substantial regeneration of diseased muscle and bone tissue.



© pixabay

"With this collaboration, we combine Sirana's novel miRNA approach and the founders' long experience in the field of musculoskeletal diseases and underlying disease mechanisms with Pfizer's expertise and capabilities," said Michael Kring, CEO of [Sirana Pharma GmbH](#).

Combining the two competencies would allow Sirana to rapidly evaluate its drug candidates for the treatment of this rare disease and identify potential candidates for further development, Kring added.

"At Pfizer, we are committed to advancing promising new research - both with our internal capabilities and through collaborations with companies like Sirana - with the goal of bringing potentially life-changing medicines to patients around the world," said Seng H. Cheng, Ph.D., senior vice president and chief scientific officer, Pfizer Rare Disease. "We look forward to working with the team at Sirana to further pursue this new and innovative research approach using miRNA for the potential treatment of rare bone diseases."

WACKER invests double-digit million euro amount in Biotechnology Center

The WACKER Group is pooling its biotechnology research activities at its Munich site. The company is investing a double-digit million euro sum in the construction of a Biotechnology Center, which is scheduled to come on stream in 2024. With this investment, WACKER is strengthening its biotechnology business.



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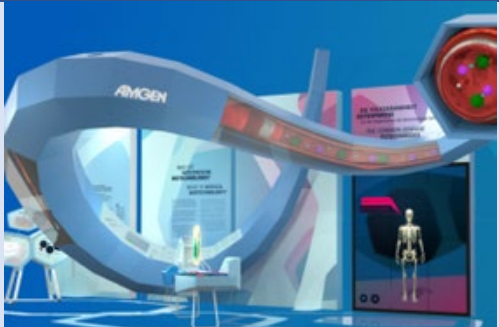
The [WACKER](#) Biotechnology Center will be built in Munich, at the site of the electrochemical industry consortium.

Laboratory and pilot-plant space is planned on some 2,000 square meters, spread over three floors. This will provide space for around 90 employees. Research will focus on processes for the production of biopharmaceuticals and on the fermentative production of ingredients for food and dietary supplements. By bundling biotechnological research and development under one roof, the efficiency of research work is to be improved.

"With the WACKER Biotechnology Center, we are pooling and intensifying our biotech research activities. The additional capacity will accelerate the growth of our Life Science division," says WACKER CEO Christian Hartel, commenting on the construction project. As part of its growth strategy, the company plans to significantly increase investments in its biotechnology business in the coming years and expand its product portfolio through innovations, partnerships and acquisitions.

Amgen theme island at the Deutsches Museum in Munich

The Deutsches Museum in Munich, one of the world's largest science and technology museums, is opening many modernized museum areas following a renovation. The theme island of the biotechnology company Amgen, with two sites in Munich, which has already been on display at the museum since 2009, has also been updated.



© Amgen

As a long-standing partner of the Deutsches Museum, [Amgen](#)'s exhibits illustrate the medical benefits of biotechnology. New exhibition modules, including models, animations, graphics, videos and interactive elements, give visitors an insight into this **key technology** of the 21st century.

Exhibition explains how biopharmaceuticals work and their benefits

The first stop on Amgen's theme island explains the difference between synthetic chemical drugs, such as the classic headache tablet, and biopharmaceuticals, the best-known of which is insulin. The complex manufacturing processes of biopharmaceuticals, a key differentiator between the two categories of drugs, are also presented in an understandable way. Most of the Amgen exhibits explain the practical applications of biopharmaceuticals, for example, in cancer, cardiovascular disease and osteoporosis.

[Read more](#)

FORUM Science & Health

Around 200 participants accepted the invitation to the third interdisciplinary conference FORUM Science & Health on July 05 and 06, 2022, to discuss the future of medicine with politicians, high-ranking speakers from research, clinical and biotechnology industry.

FORUM Science & Health

The [FORUM Science & Health](#) is the interdisciplinary meeting point in Bavaria for all those interested in life science and biotechnology and connects players from the fields of biotechnology, medicine, nutrition, medical technology and digitization in order to set new impulses for a future-oriented integrated medicine.

Various formats provided information on current developments in the industry, new technologies, groundbreaking findings and topics in health research.

Presentations highlighted the potential of mRNA for diagnostics and therapies, discussed the possibilities of Big Data, e.g. for high-throughput screening procedures, and presented nanotechnologies in use for drug development and diagnostics. A panel discussion provided an outlook on how a medicine of the future can protect against future health threats: Innovative approaches to combat antibiotic resistance, different therapeutic COVID-19 approaches to efficiently fight infection, and the impact of lifestyle adaptations and changing environmental conditions for healthy living.

Bavaria's Secretary of State for Economic Affairs Roland Weigert underlined the importance of the congress in his digital greeting and highlighted the innovative power of Bavaria as a business location:

"Bavaria is a highly attractive region for innovations and productive collaborations between business, science and research. Our goal is to vigorously drive new trends and groundbreaking innovations for the medicine of the future."

The speakers of the four exciting keynotes



Prof. Patrick Cramer,
Director, Max Planck Institute for Multidisciplinary Sciences
and from 2023 President of the Max Planck Society



Prof. Heyo Kroemer,
Chief Executive Officer, Charité Berlin



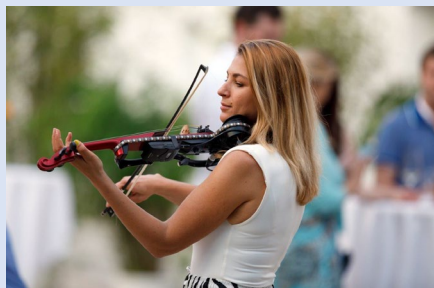
Prof. Clemens Wendtner,
Senior Medical Director of Infectiology, Munich Clinic Schwabing



Prof. Matthias H. Tschöp
Chief Executive Officer, Helmholtz Munich

[Read more about FORUM Science & Health 2022](#)

FORUM Science & Health



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Dymium wins Munich Business Plan Competition

Dymium develops a minimally invasive treatment method for the remnant-free removal of kidney stones using magnetic separation technology. With this innovative approach, the medtech startup from Garching near Munich wins the final of BayStartUP's Munich Business Plan Competition 2022.



© BayStartUP / Andreas Gebert

Dymium is developing an innovative, **minimally invasive treatment method for the residue-free removal of kidney stones**, thus winning the final of the 2022 Munich Business Plan Competition. With the help of magnetic separation technology, kidney stone fragments are transformed by a biocompatible agent into magnetizable objects and magnetically extracted, which increases the prospect of greater healing chances and surgery improvements and drastically reduces the recurrence of stones in patients.

Back in 2021, the project "Suspension for Magnetization of Kidney Stones" by **Dr. Sebastian Schwaminger** and **Florian Ebel** and their team from the [Technical University of Munich](#) won the BioRegions Innovation Award and also the audience award.

The winner teams won the **final competition phase** after two evaluation rounds with 74 participant teams from all over southern Bavaria. They will receive winner prizes totaling 30,000 euros. Their focus is on solutions for the MedTech, IOT logistics and energy supply sectors. Sponsor in the final and long-standing cooperation partner of the Munich Business Plan Competition is LfA Förderbank Bayern. [Read more](#)

NEOsphere Biotechnologies - new capital for degrader proteomics platform

NEOsphere Biotechnologies from Planegg near Munich announced the completion of a Series A financing round to further expand its proteomics platform that screens extensive small-molecule libraries for degraders of pathogenic proteins previously considered undruggable.

NEOsphere Biotechnologies combines data-independent acquisition mass spectrometry (DIA-MS) with custom-built data interpretation to deliver **high-throughput proteomic analysis** with superior sensitivity, precision, and data completeness. The platform screens thousands of **degrader compounds** against more than 10,000 proteins - fast and highly scalable to align with drug development cycles.



The NEOsphere Biotechnologies team: Uli Ohmayer, Björn Schwalb, Jutta Fritz, Henrik Daub, Martin Steger (from left)
© NEOsphere Biotechnologies

NEOsphere Biotechnologies provides its strategic partners with in-depth screening of compound libraries of any size against the entire human proteome to initiate and drive **drug candidate discovery**. Once candidates are identified, they are validated as novel degrader targets in a high-throughput manner using powerful technologies.

[Read more.](#)

Microbify - 3rd place in the Businessplan Wettbewerb Nordbayern of BayStartUP

The life science startup Microbify from Regensburg won third place in the finals of BayStartUP's Northern Bavaria Business Plan Competition and, together with the top placed companies, secured prize money totaling 22,500 euros. The company accompanies natural gas storage operators on their way to a renewable future using its special microbiological expertise.



© BayStartUP / Andreas Gebert

The founders **Dr. Georg Schmid** and **Linda Dengler** of third- specialize in high-pressure sampling and work with anaerobic microorganisms. The company spin-off from the Department of Microbiology and Archaea Center at the Regensburg University investigates natural gas reservoirs for their suitability for **biological methane production and hydrogen storage** and assists customers with microbial-induced corrosion that affects gas quality and infrastructure. [place Microbify GmbH](#)

More than **100 startup teams** participated in the 2022 season of the competition. The aim of the program is to prepare them for approaching investors and entering the market with business planning know-how and extensive feedback on their plans. BayStartUP selected the winning startups together with LfA Förderbank Bayern at an exclusive award event in Nuremberg. [Read more](#)

Munich scores at the Science4Life Business Plan Competition 2022

Fusix Biotech, Dymium and Opsyon Therapeutics were persuasive in this year's business plan phase of the Science4Life Venture Cup. The Munich-based start-up Fusix Biotech took third place and aims to offer patients with difficult-to-treat cancers safe and effective immunotherapeutic approaches with the help of its platform technology.

In the Science4Life Venture Cup, [Fusix Biotech](#) from Munich took third place with its idea of offering patients with difficult-to-treat cancers safe and effective **immunotherapeutic therapy approaches** with the help of a platform technology.

The winners from Munich also included **Dymium** and **Opsyon**: [Dymium](#) from Garching offers the world's first method for **residue-free kidney stone removal** using a magnetic separation technology. The interdisciplinary group works at the Bioseparation Engineering Group of the Technical University of Munich and at the Klinikum rechts der Isar.

[Opsyon Therapeutics](#) is a spin-off project of Ludwig-Maximilians Universität München and develops **novel immunotherapies** by combining immune checkpoint inhibition with antibody-based tumor targeting in one drug. The final awards ceremony of the Science4Life Venture Cup and Science4Life Energy Cup of the [independent start-up initiative Science4Life e.V.](#) took once again place on a grand scale in Frankfurt. [Read more](#)



The winners of the Science4Life Business Plan Competition 2022 © Science4Life

25 Years Bio^M & Munich Biotech Cluster



On July 27, Bio^M and the Munich Biotech Cluster celebrated their 25th anniversary. Together, they can claim a great success story. With the support of the biotech cluster management organization, the life science region has become one of the most successful biotech hotspots in Europe. At the celebration event in the Kupferhaus in Planegg, around 250 invited guests from industry, science and politics came and looked back on the joint achievements as well as on a promising future.

It all started in 1997: [Bio^M](#) was founded to strengthen **Munich's biotechnology sector** after Munich had won the BioRegio competition of the German Federal Ministry of Research and Technology (BMFT) a year earlier. Since then, Bio^M has been acting as the cluster management for the biotechnology industry in Munich at the Martinsried campus. In the meantime, the Munich biotech cluster with its **more than 220 biotech companies and over 19,000 employees** has developed into one of the most successful European biotech clusters.

Prof. Horst Domdey, managing director of Bio^M: "The innovation-driven Munich Biotech Cluster has an exceptionally high scientific and entrepreneurial potential, which is fed by the many excellent research institutions. Bio^M will continue to do everything possible to leverage this potential, to support the activities that emerge from it and to jointly lead them to success. Thus, the next 25 years should continue to be very exciting!"

Roland Weigert, State Secretary in the Bavarian Ministry of Economic Affairs, Regional Development and Energy congratulated: "Bavaria is the leading location for biotechnology in Germany and Munich is a top international address for companies in the sector. This success is also the result of our close and valuable cooperation with Bio^M. Bavaria recognized early on that biotechnology is a key technology for the entire 21st century."



Dr. Erwin Soutschek, CEO Mikrogen GmbH, Prof. Horst Domdey, managing director Bio^M, Dr. Simon Moroney, founder MorphoSys AG, Dr. Viola Bronsema, CEO BIO Deutschland e.V., Dr. Otto Wiesheu, former Minister of Economic Affairs Bavaria, Bavarian State Secretary Roland Weigert (from left to right)

[Read more about our anniversary celebration](#)



Asia's Premier Hybrid Partnering Event

Oct 12_{Wed} - 14_{Fri}. 2022 **PACIFICO Yokohama**

Bio-Europe Leipzig

October 24–26, 2022 | Leipzig, Germany,
November 2–4, 2022 | Virtual



Save the Date!

DigiMed Bayern Symposium 2022




October 6th, 2022 | German Heart Centre Munich

Please find current event information on our website www.bio-m.org/en/events.

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