Bavarian Biotech News July 2023





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Dear Reader,

with our annual report **Biotech in Bavaria 2022/23**, we recently presented the current biotech figures as well as developments and successes of the Bavarian biotechnology scene.

The number of biotechnology companies located in Bavaria increased slightly and the number of employees reached a peak within the last year. The start-up dynamic remained at a stable level and was even above the national average.

All in all, good development for the region in these challenging times. And the companies are mostly positive about the future, as our survey has shown.

You can find more about Bavarian biotechnology on the following pages and in our annual report.

Have fun reading!

Your Bio^M team



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The Bavarian Biopharma Sector in Numbers



Click here for the online version of the complete Bavarian Biotech Report 2022/23

Bavarian Biotech News, July 2023

www.bio-m.org



Opening of the Helmholtz Pioneer Campus: perfect conditions for creative talents

With about 200 guests and high-ranking

representatives from politics and science, Helmholtz Munich opened its Pioneer Campus. Under the motto of interdisciplinarity, the top research building is intended to attract young talent and promote medical research and development. With high-tech laboratories and a view of the Alps and the Allianz Arena, the EUR 52 million building provides the right framework conditions.



After three years of construction, the <u>Helmholtz Pioneer Campus</u> with 6300 sqm in Neuherberg will offer a state-of-the-art infrastructure for 20 pioneer groups and start-ups with a total of 200 workplaces starting this fall. The building is intended to promote internationally networked cutting-edge research in Germany. With open-plan interior design, co-working spaces and high-tech laboratory areas, it is intended to promote young and innovative and highly qualified researchers from all over the world.

With its three central research areas of **Bioengineering**, **Biomedicine and Biomedical AI**, the Helmholtz Pioneer Campus is an integral part of Helmholtz Munich's strategic orientation. State-of-the-art technologies from stem cell research, bioengineering, medical imaging and artificial intelligence, among others, are to be combined here and further developed on an interdisciplinary basis. The goal: to detect complex diseases such as diabetes, cancer or neurodegenerative changes earlier, to diagnose them more specifically and to cure them with personalized methods. <u>Read more</u>

Ground-breaking ceremony for EUR 63 million CITABLE research building at Erlangen University Hospital

The new research building of the <u>German Center for</u> <u>Immunotherapy (DZI)</u> is being constructed between the Translational Research Center (TRC I) at Schwabach and the Internal Medicine Center of the University Hospital Erlangen: the Center for Immunotherapy, Biophysics & Digital Medicine (CITABLE).

The goal of all involved is to develop **innovative diagnostic and therapeutic methods** for inflammatory diseases and cancer.



Ground-breaking ceremony for CITABLE © Uniklinikum Erlangen/Michael Rabenstein

Within CITABLE (TRC II), a total of 2,014 sqm of floor

space will be distributed between six floors, with another 1,072 sqm for technical service areas and 1,224 m2 for public spaces. In addition to **high-tech laboratories**, the building includes zones for meetings and breaks aimed at promoting communication between the scientific disciplines. The building will also contain offices and seminar rooms.

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CITABLE is an essential part of **FAU Campus Erlangen (North)**, which has been in planning as a unit since the design competition for the Translational Research Center in 2009. Read more



WildDISCO: Researchers from LMU and Helmholtz Munich develop revolutionary imaging of entire bodies

A team of <u>Ludwig-Maximilians-Universität München</u>, the <u>LMU Hospital</u> and <u>Helmholtz Munich</u> researchers developed a new method called WildDISCO that uses standard antibodies to map the entire body of an animal using fluorescent markers. This revolutionary technique provides detailed 3D maps of structures, shedding new light on complex biological systems and diseases. With the help of AI, this will allow disease progression to be predicted in the future without the use of animal models.



Whole-body atlases of the mouse nervous system. © Helmholtz Munich, Ali Ertürk, Ertürk Lab

WildDISCO has the potential to transform our

understanding of **intricate processes** in health and disease and paves the way for exciting advancements in medical research. In the past, scientists relied on genetically modified animals or specialized labels to make specific structures and cells of interest visible in the entire body of an animal - with expensive and time-consuming methods.

The scientists now introduced a new method called WildDISCO, which makes use of standard antibodies to map whole bodies of mice. This ultimately enables the creation of detailed **three-dimensional maps** of normal and diseased structures in mammalian bodies in an easy-to-use and cost-efficient way.

Read more

Prof. Patrick Cramer takes over as Max Planck President

It had been announced for a long time - now it is official: At the <u>Max Planck Society</u>'s Annual General Meeting in Göttingen, the previous MPG President, Martin Stratmann, symbolically handed over the reins to his successor Prof. Patrick Cramer. Cramer paid tribute to Stratmann's achievements and, in his inaugural address, outlined the three major fields of action he sees for a sustainable Max Planck Society.

In his inaugural address in Göttigen, **Patrick Cramer** answered the question of how the Max Planck Society

Prof. Dr. Patrick Cramer © Christoph Mukherjee

should continue after 75 successful years. The new president named three fields of action that are central to him: Attracting and promoting people, renewing processes and strategies, and assuming social responsibility.

Cramer takes over the post in turbulent times from Prof. Martin Stratmann, who has led the renowned research organization for the past nine years, during which **six Nobel Prizes** went to Max Planck scientists - five of them in the last three consecutive years. Startmann's central concerns were improving the framework conditions for young scientists and networking at national and international level to strengthen science in Eastern and Central Europe and for Africa, together with the Alexander von Humboldt Foundation. <u>Read more</u>



First single cell atlas of the lung published

<u>Helmholtz Munich</u> scientists, together with an international team of researchers, have developed the "Human Lung Cell Atlas". The atlas shows the diversity of individual lung cell types and allows conclusions to be drawn about the changes that age, smoking, or lung diseases cause in the cells of the respiratory organ. It is the first single-cell atlas of a major organ and was produced as part of the Human Cell Atlas (HCA), a global collaborative project to map the entire body at the single-cell level. The results have now been published in Nature Medicine.



Nearly 100 partners and 60 international institutes collaborated to analyze the approximately **2.4 million** cells of the human lung. They have thus succeeded in the first mapping of a large organ down to the single cell level. To do so, the scientists relied on artificial intelligence and machine learning, combining data from nearly 40 existing lung studies.

For each cell in this lung atlas, the researchers now know which genes were active in which cell, allowing them to draw **conclusions about how these cells function**, including how cells differ between individuals based on age, gender or disease.

Read more

ITM raises record sum of EUR 255 million

Garching-based ITM has announced one of the largest private investment rounds in European biotechnology to date. With the sum of 255 million euros, the company plans to advance its radiopharmaceutical pipeline and expand its radioisotope production capacities. Among the investors are the Strüngmann brothers.

Founded in 2004, <u>ITM Isotope Technologies Munich SE</u>, based in Garching near Munich, specializes in the development, production and worldwide supply of targeted



diagnostic and therapeutic **radiopharmaceuticals and radioisotopes** for use in **cancer treatment** - including neuroendocrine tumors, glioblastoma, prostate cancer, ovarian cancer or NSCL adenocarcinoma, as well as osteosarcoma and bone metastases.

The announced EUR 255 million equity investment round, led by Temasek and with participation from BlackRock Alternatives1, Qatar Investment Authority (QIA), Nextech2 and Carbyne, will be used by ITM to further develop its **oncology pipeline** for targeted radionuclide therapies (TRT). For the first time involved are **Thomas and Andreas Strüngmann** and their company ATHOS. The brothers, founders of Hexal, a pharmaceutical company based in Holzkirchen, Germany, were involved in the founding of BioNTech as well and hold about half of the shares in the Mainz-based biotech company through the Athos Family Office. <u>Read more</u>



New building of the Helmholtz Institute HIRI for RNA-based Infection Research in Würzburg

With numerous supporters, cooperation partners and companions, the Helmholtz Institute for RNA-based Infection Research (HIRI) Würzburg celebrated the groundbreaking ceremony for its new building on July 6. The facility investigates the great potential of ribonucleic acids (RNA) for the therapy and diagnostics of diseased patients.

At the latest since the coronavirus pandemic, it has become clear that concerning pathogens are among the greatest health challenges of our



Bavaria's Minister President Markus Söder (left) with HIRI-Director Prof. Jörg Vogel. © HIRI/Mario Schmitt

time - as are increasing antibiotic resistance and chronic infections. The Würzburg-based <u>Helmholtz</u> <u>Institute for RNA-based Infection Research (HIRI)</u>, founded in May 2017, has taken on these challenges and is developing new strategies and forms of treatment against infectious diseases based on ribonucleic acids (RNA).

Currently still housed on an interim basis in premises at the Julius Maximilians University (JMU), the institute - funded by the Bavarian Ministry of Economic Affairs and co-financed by the European Union - will receive its own building in order to fulfill its research mission at the Würzburg site on a permanent basis. The new building will provide space for 130 employees on almost 5,000 sqm by 2026. <u>Read more</u>

ITM opens world's largest Lutetium-177 Production facility for targeted radionuclide therapies against cancer

ITM Isotope Technologies Munich SE (ITM) opened its new production facility for Lutetium-177 for targeted radionuclide therapies against cancer. The new manufacturing plant in Neufahrn near Munich, Germany, increases ITM's production capacity tenfold. It is the world's largest production site of lutetium-177, an innovative medical isotope used in targeted cancer therapies.

The ceremonial opening of the new NOVA production facility for the manufacture of therapeutic radionuclides took place together with State Minister



© ITM Isotope Technologies Munich SE / Dominik Gierke

Dr. Florian Herrmann, Head of the Bavarian State Chancellery, and other high-ranking guests on site in Neufahrn near Munich. Technologically at the state of the art of Industry 4.0, the new production site achieves a **high degree of automation in the production process** and internal logistics on an area of around 7,000 sqm. The new site offers clean rooms, laboratories and offices that can be used by up to 200 employees for research as well as radiopharmaceutical manufacturing and aseptic production with the highest quality standards.

Due to its medical properties, lutetium-177 has gained importance in precision oncology treatments internationally as a valuable starting material for the production of various radiotherapeutics in recent years. <u>Read more</u>



Sandoz invests EUR 25 million and expands Holzkirchen into a Biopharma Technical Development hub

Sandoz, manufacturer of generic and biosimilar medicines, makes an investment of approximately 25 million euros in its site in Holzkirchen, Germany, to expand its Biopharma Technical Development (BioTD) capabilities and complete a state-of-the-art biotech lab by Q4 2023. The Center for Analytical Characterization is expected to support the future growth of biosimilars.



As a result of the investment, Holzkirchen will become one of the primary technical locations for biosimilar development at Sandoz, bringing together state-of-the-art laboratories and analytical expertise at one site. Combined with a major expansion in 2017, this represents a total investment of nearly EUR 100 million in the company's German headquarters.

Thomas Weigold, Sandoz Country President, Germany, and CEO of Hexal AG: "Our continued investment in Holzkirchen reflects our commitment to expanding our BioTD capabilities and reinforces our dedication to providing high-quality biosimilars to patients worldwide."

Read more

Numares Health: FDA clears cardiovascular diagnostic test and core technology platform

The <u>US Food and Drug Administration</u> has cleared a <u>Numares Health</u> test, the AXINON[®] LDL-p Test System, as a new tool physicians can use to measure lipoproteins for patients at risk for cardiovascular disease. Currently, Numares is the only company in the US selling an FDA-cleared NMR test. The FDA clearance also includes the company's core technology platform, the proprietary AXINON[®] System, that incorporates diagnostic testing algorithms into nuclear magnetic resonance (NMR) spectroscopy.



Numares Health AXINON® System: Now FDA-Cleared © Numares AG

The newly cleared **AXINON® LDL-p Test System** provides more detailed information about cardiac function than the standard LDL-C (low-density lipoprotein or "bad cholesterol") measurement. In a joint statement by the American College of Cardiologists and the American Diabetes Association, LDL-p measurements, like those measured by the Numares AXINON® LDL-p Test System, can help physicians in managing patients with elevated **risk of cardiovascular disease**, because these measurements may better reflect the true cardiac risk associated with cardiometabolic risk.

Numares uses AI based technologies and multiple biomarkers - known and newly discovered - to develop improved diagnostic testing for conditions related to metabolic dysfunction, such as chronic kidney, liver and cardiac diseases. <u>Read more</u>



QS World University Rankings: TUM again ranked first in Germany

In the renowned QS World University Ranking, the <u>Technical University of Munich</u> (TUM) and the <u>Ludwig-Maximilians-Universität München</u> (LMU) top the list of the best German universities. The TUM ranks 37th worldwide and is at the top - for the ninth time in a row. LMU finds itself in position 54 and was able to move up five places compared to the previous year.

TUM improved by 12 places to rank 37, while LMU moved up five places to rank 54 compared to the previous year (rank 59). In the latest **"THE World**



Both in science and in business, TUM is held in high esteem worldwide. © Stefan Woidig / TUM

University Ranking 2023", both universities are ranked among the top 10 (TUM: 7th place; LMU: 8th place) of the best universities in Europe. The ranking is led by the Massachusetts Institute of Technology (MIT) and the Universities of Cambridge and Oxford.

In the latest edition of the **"QS World University Rankings by Subject"**, in which QS evaluates universities according to subject groups and individual subjects, TUM was ranked 28th in the natural sciences. LMU, on the other hand, is ranked 41st there and 47th in the field of "Life Sciences and Medicine" (TUM: rank 80).

Read more

Aenova opens new drug production building in Regensburg for EUR 25 million

The <u>Aenova Group</u> has opened a new production building at its Regensburg site for 25 million euros for the manufacture of highly effective drugs for cancer treatment, among other things. One of the most modern production halls for cytostatics and cytotoxics, both highly effective pharmaceutical agents against cancer, has now been opened at the Aenova Pharma site in the Regensburg bioregion. in order to be able to meet the increased global market demand for highly effective drugs.



Supply bottlenecks for certain drugs have dominated the German media for months. To meet the steadily

Official opening of the new laboratory building © Aenova Group

increasing demand, Aenova, one of the world's leading development service providers and contract manufacturers for the pharmaceutical and healthcare industries, has expanded its Regensburg site with **a new building for the development and production** of highly potent active ingredients at a cost of around 25 million euros.

In Regensburg, the company develops and produces drugs for the treatment of inflammatory diseases such as **psoriasis or arthritis**, but also **autoimmune diseases** and **cancer** such as leukemia, as well as novel drugs (so-called New Chemical Entities, NCE). Special safety standards must be observed in the development and production of these highly effective active ingredients. <u>Read more</u>



Bio^M info day "Lunch & Learn: How we support your biotech idea!"

In the scope of the "Bayerische Gründungstage", Bio^M invited to an info day in the rooms of the start-up incubator-to-be "Munich Accelerator Life Sciences & Medicine" (MAxL) at the IZB. 20 scientists and founder-to-be took the chance of "Lunch & Learn: How we support your biotech idea!" to learn about Bio^M's programs and services for founders and young entrepreneurs on-site in the Munich biotech innovation hub Martinsried.

The info day was addressed to senior students and young researchers in biotechnology, health



Dr. Petra Burgstaller (Bio^M) and Dr. Patrick Großmann (Invitris) $\ensuremath{\mathbb{O}}$ Bio^M

technology and life sciences flirting with commercializing their biotechnology ideas and setting up their own business one day. Bio^M gave an overview on **how it supports founders and start-up teams** in terms of financing, pitching, networking and commercializing biotech innovations.

Highlight of the info day was an exclusive insight into a founding story by founder and **CEO Dr. Patrick Großmann of Invitris**, a start-up that combats multi-resistant bacteria by phage technology.

Read more

Biotech start-ups looking for capital at Bio^M BioAngels Pitch Day

At Bio^M's 13th BioAngels Pitch Day on May 24, promising start-ups again met potential investors. Ten selected founder teams showed the great potential of the Bavarian start-up scene with their pitches to venture capital investors and business angels from the life science sector. The topics were broad: from drug development to digital health, diagnostics, cell therapies and medtech.

Emerging pre-seed teams and start-ups presented their technology and business model to potential funders with an investment focus on life sciences and healthtech at the exclusive



10 biotech start-up teams presented their business models to interested investors at the Bio^M BioAngels Pitch Day. $@\ Bio^M$

matchmaking event. Ten minutes had to be enough to convince the potential financiers - with scientific data and a sound business strategy.

The project ideas were diverse. With the aim of successfully attracting funding, innovative developments of drugs for the treatment of tumor diseases as well as novel approaches in the field of digital health, diagnostics and medtech were presented.

Read more

BioEntrepreneurs in Bavaria



Sedivention wins Science4Life Venture Cup with therapeutic approach against obesity

New treatments in cancer therapy, the world's thinnest endoscopes and software for the energy of the future - the winners of the <u>Science4Life</u> business plan phase are developing the business models of the future. <u>Sedivention GmbH</u> from Munich won the EUR 20,000 Science4Life Venture Cup with a medical device designed to combat obesity.

New approaches for science, research, pharmaceuticals, production and ideas for more



Team of Sedivention © Science4Life

energy efficiency and less CO₂: The participants in the Science4Life business plan phase address current problems with innovative solutions.

First place in the **Science4Life Venture Cup** goes to the medical technology company **Sedivention** from Straßlach near Munich, which has declared war on **obesity**. This is increasing worldwide and leads to diabetes, high blood pressure and cancer. Sedivention is developing a medical device for a one-time, outpatient treatment: Similar to a gastroscopy, the nerves that conduct the feeling of hunger from the stomach to the brain are sclerosed. This relieves an increased feeling of hunger and makes it easier to lose weight. Implant, surgery or medication are therefore no longer necessary. <u>Read more</u>

AATec Medical develops alpha-1 antitrypsin therapy with EUR 2.7 million seed funding

AATec Medical GmbH, a Munich-based biotechnology company has started its operational activities and is developing a multiproduct platform based on alpha-1-antitrypsin (AAT). The company starts with a seed financing of EUR 2.7 million, supported by private investors, industry experts and family offices.

The funding will be used to scale AATec's technology, expand the team, and prepare for clinical development of its first product candidate, ATL-105, an innovative formulation for the



inhaled treatment of respiratory diseases, for launch in 2024.

Alpha-1-antitrypsin (AAT) is an **immunomodulator** with broad anti-inflammatory and antiviral therapeutic effects. Human serine protease inhibitor (SERPIN) is responsible for protecting tissues from damage by proteases. Currently, AAT products are only used for substitution therapy in AAT deficiency disease, a severe genetic defect. These AAT products are made exclusively from human blood plasma, making them a scarce and expensive resource.

Read more



S4DX: Up to EUR 3.6 million bridge funding

EIT Health-backed <u>Smart4Diagnostics</u> (S4DX) has just announced the successful closing of up to 3.6 million euros in a bridge financing round. The funding comes from private investors including <u>VP Venture</u> <u>Partners</u> and the <u>SARSTEDT AG & Co. KG</u>. The money will be used to scale the S4DX digital pre-analytical monitoring system within Europe and globally.

S4DX formed in 2018 as part of the EIT Health Wild Card program, which focuses on building game-changing life science companies to break



The founder team of Smart4Diagnostics: Yannick Timo Böge, Julia Flötotto, Hans Maria Heÿn, Malte Dancker (f. l. t. r.) © Roche/Kern

new ground in health by challenging the status quo in areas of high unmet need.

Since then, the company has further developed its "**digital human blood sample fingerprint**", a complete data-picture of all quality aspects for human samples from collection to arrival in the lab. All relevant pre-analytical data points are collected in real time and can be integrated seamlessly into any laboratory information system or laboratory analyzer middleware.

Read more

EUR 1 million funding for Leopard Biosciences from Würzburg and its CRISPR technology

The Helmholtz Institute Würzburg (HIRI) receives two grants totaling more than one million euros for Leopard Biosciences. This funding will be used to commercialize the LEOPARD diagnostic technology. The innovative diagnostic platform, which can detect multiple RNA and DNA biomarkers in a simple point-of-care test, is expected to help improve medical care decisions in the future. The funding comes from the Helmholtz Enterprise spinoff program and the Helmholtz Validation Fund.



The <u>Helmholtz Institute Würzburg (HIRI)</u> and <u>Julius Maximilians University (JMU)</u> had achieved a breakthrough in medical diagnostics with their research into the natural gene scissors CRISPR, a part of the bacterial immune system. Joint research on CRISPR ribonucleic acids (RNAs) led to the development of a new technology called LEOPARD. The results have already been published in the journal *Science*.

What is special about the LEOPARD technology is that it has the potential to detect several disease-related biomarkers in a single test. This should lead to a faster and better diagnosis as well as therapy of patients. Leopard Biosciences' HIRI spin-off team, led by HIRI Department Head **Prof. Chase Beisel**, now plans to use the funding to further test the technology and advance its commercialization.

Read more



Biotech Bootcamp by Bio^M and SmiLe – Apply until August 6th!



Successes of m⁴ Award winners



Mallia Therapeutics raises seed funding for novel treatment of hair loss

<u>Mallia Therapeutics GmbH</u>, based in Erlangen, Germany, has raised capital through seed funding.

The company is developing **soluble CD83** (sCD83) for the **treatment of hair loss**. Following a series of previous project grants, Mallia Therapeutics, <u>m⁴ Award winner</u> of 2021, has successfully launched the **seed funding round** to continue its preclinical research. Mallia Therapeutics hopes to enter the clinical phase and start treating patients within the next two years. <u>Read more</u>



m⁴ Award winner 2021 Mallia Therapeutics © Bio^M

smartbax completes EUR 1.2 million seed funding to develop antibiotics

Munich-based biotech company and m⁴ Award 2019 winner <u>smartbax</u> has closed a EUR 1.2 million seed financing round.

With the new capital, the company will advance its preclinical studies on **small molecule antibiotics** and expand its scientific team to further develop its innovative research platforms and find new solutions against **multi-drug resistant pathogens**. Rad more



The smartbax team © smartbax

Dr. Marcus Conrad: new approach in cancer therapy with ferroptose

A team of researchers led by m⁴ Award winner 2017, Dr. Marcus Conrad from <u>Helmholtz Munich</u>, has discovered a novel cancer treatment agent called icFSP1 that increases the sensitivity of cancer cells to ferroptosis.

During metastasis or a change in cell metabolism, certain cancer cells acquire a susceptibility to **ferroptosis**. icFSP1 strongly inhibits tumor growth in the body and leads to condensation and inactivation of FSP1 in tumor tissue. Read more



Dr. Marcus Conrad (right) with Toshitaka Nakamura, Ph.D. student © Helmholtz Munich

INCATE catalyzes critical growth stage at Invitris

INCATE has selected m⁴ Award 2021 winner Invitris as the first venture to receive EUR 250,000 in "Stage II Funding".

That will allow Invitris to complete spin-out from the <u>Technischen Universität München (TUM)</u> and further its mission to scale the production of **phages, phage-derived and other antimicrobial proteins** in the fight against antimicrobial resistance. <u>Read more</u>



Phages combat bacteria. © istock

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Events



Festival of Biologics

October 10 - 12, 2023 | Basel, Switzerland

<u>BioJapan</u>

October 11 - 13, 2023 | Yokohoma, Japan

BIO-Europe Munich

November 6 - 8, 2023 | Munich, Germany Meet Bavarian biotechs at the Bavarian joint booth: Hall B6, stand no. #70 with over 25 exhibitors

- Welcome reception on November 5th from 7 p.m. in the Munich Residenz
- Various receptions at the Bavarian joint booth

Nordic Life Science Days

November 28 - 30, 2023 | Copenhagen, Denmark

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

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